EXTRA! Macworld's Top 101 Tips, page 102

JULY 1997

Macworld

THE ESSENTIAL MACINTOSH® RESOURCE
www.macworld.com

Speed Challenge: Mac vs. PC

The Mac Wins

Lab Tests Prove It

PAGE 92

RATED

Five New Digital Cameras

PAGE 48

Blinding Speed For

Jean Louis Gássee And His Team Developed The BeOS™ On Machines From Power Computing.

Visionaries like Jean Louis Gássee have been quick to adopt Power Computing. Probably because no other PowerPC™ manufacturer has been more committed to introducing the latest technology features. As president of Be Inc., Jean Louis is obsessed with having the newest technology at his fingertips.

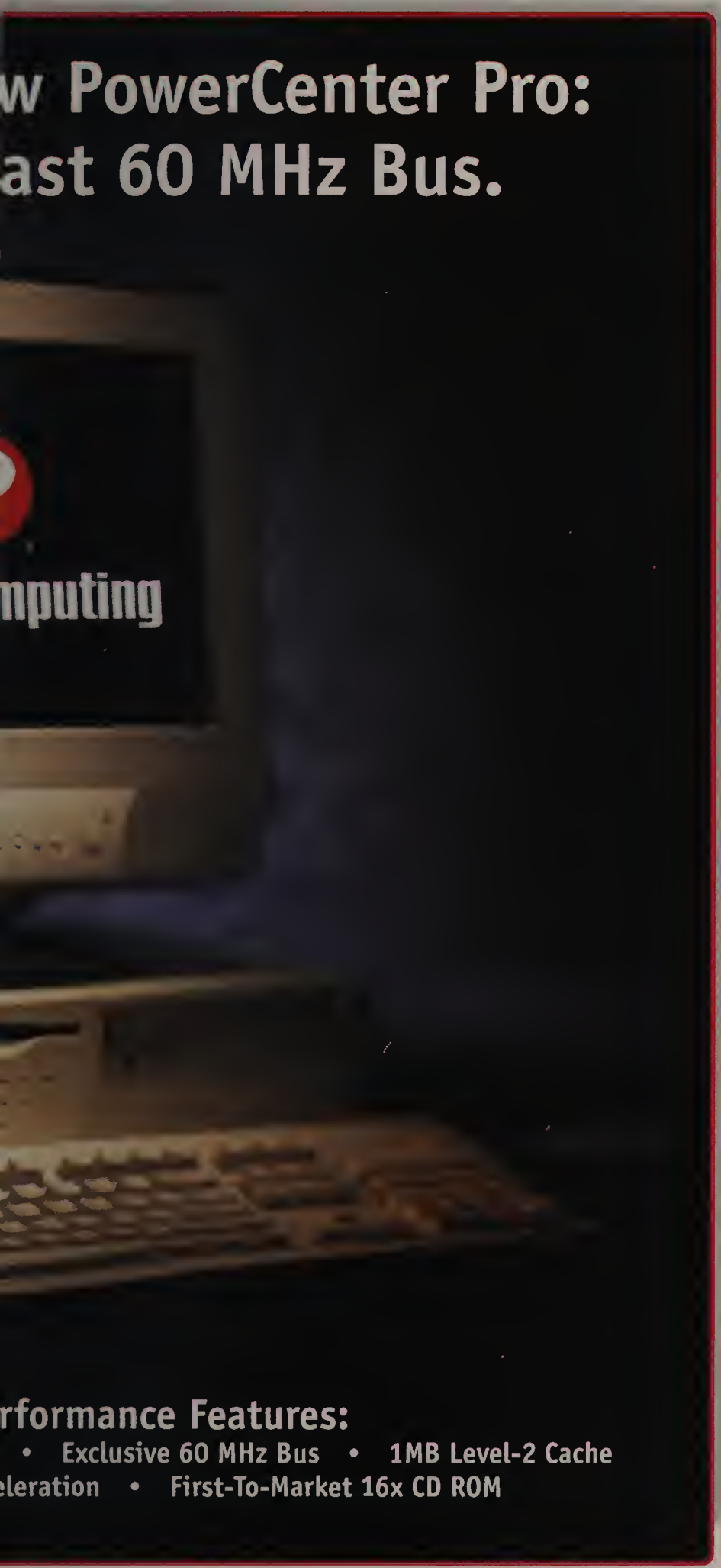
Power Computing's Exclusive Features Have Pushed The Mac OS To A Whole New Level.

Power Computing was the first on the Mac OS platform to offer custom-configured internal Zip™ and Jaz™ drives ; the first with an 8 MB IMS Twin Turbo graphic accelerator card; the first with on-board 3D acceleration; the first with standard upgradeable daughtercards; and the only one with a standard 1MB Level-2 cache.

The Latest Exclusive From Power Computing: Our New Ultra-Fast 60MHz Bus.

In addition to the illustrious list above, the new PowerCenter™ Pro is the only machine with a 60 MHz Bus. Propeller-heads everywhere are spinning over PowerCenter Pro's increased bus speed. Combine this with a 180 or 210 MHz

Geeks With Vision.



Power PC 604e processor and the PowerCenter Pro means high performance is now available for the masses. And Power Computing will be the machine you'll be running the Be OS on first.

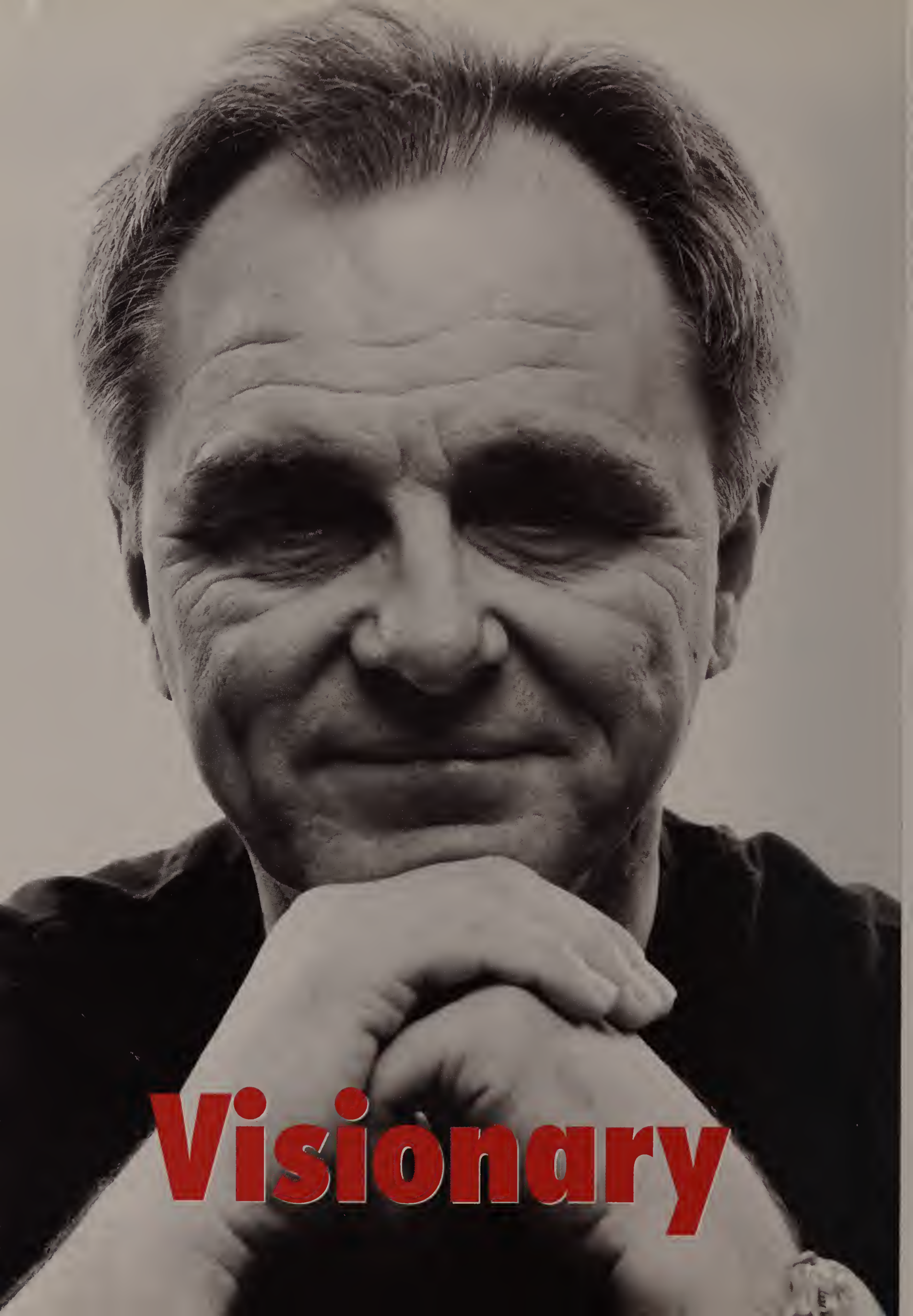
"THIS LOOKS LIKE A KILLER MAINSTREAM MAC."
-MACWORLD MAGAZINE, JUNE, 1997

Custom-Configuration Is Our Trademark.

From day one, Power Computing has believed in giving the Mac OS market a definitive choice. This is why you can call us direct and get a system with an internal Zip, Jaz or both; you can get a second internal hard drive; a video card; more memory, and even a modem. In fact, there's virtually no limit to how you can tailor-make your dream Mac OS and BeOS computer. Power Computing will customize it (which saves you time), test it (which saves you from worry), and then deliver it to your doorstep (which saves you money.)

PowerComputing

ORDER DIRECT FROM MANUFACTURER
800-410-7693
OR ORDER ONLINE AT OUR NEWLY REDESIGNED WEBSITE AT
WWW.POWERCC.COM


Visionary

How Fast Can You See Yourself Going?

NOW SHIPPING

PowerCenter Pro 210 Complete System With 17" Monitor* and 33.6 Modem

210 MHz Power PC™ Processor
32MB RAM (512 MB max)
Power 17" Monitor*

- Upgradeable 210 MHz PowerPC 604e Processor
- 2GB 5400 RPM HD
- * Exclusive 60 MHz Bus
- * Exclusive 16x CD-ROM Drive
- * Exclusive 1MB Level-2 Cache
- * Exclusive 3D On-Board Graphics Acceleration
- 2MB Video DRAM (4MB Max)
- 3 PCI Expansion Slots
- Mini-Tower Enclosure
- 33.6 Global Village Modem
- $1,000 in Bundled Software
- Extended Keyboard and Mouse

NEW!

Just $2995

NEW!

PowerBase™ Low Price/High Performance

PowerBase 200 complete
Power 15" Multimedia Display**
33.6 Global Village Modem
16MB RAM (160MB Max)

- Upgradeable 200 MHz PowerPC 603e Processor
- 1.2GB EIDE Drive
- 16MB RAM (160MB Max)
- Upgradeable 256K Level-2 Cache
- 12x CD-ROM Drive
- 2MB Video DRAM (4MB Max)
- * Exclusive 3D Accelerated Graphics
- 3 PCI Expansion Slots
- $1,000 in Bundled Software
- Mini-Tower Enclosure
- Extended Keyboard & Mouse w/PS2 support

MacUser 2D LABS

$1849

180MHz STARTER $1199
240MHz STARTER $1599
36 month business lease $82 per month

PowerCenter Pro The Affordable Workhorse

PowerCenter Pro 180 complete
Power 15" Multimedia Display**
33.6 Global Village Modem
32MB RAM (512MB Max)

- Upgradeable 180 MHz PowerPC 604e Processor
- 2GB 5400 RPM HD
- * Exclusive 60 MHz Bus
- * Exclusive 16x CD-ROM Drive
- * Exclusive 1MB Level-2 Cache
- * Exclusive 3D Accelerated Graphics
- 2MB Video DRAM
- 3 PCI Expansion Slots
- Mini-Tower Enclosure
- $1,000 in Bundled Software
- Extended Keyboard And Mouse

$2695

180MHz STARTER $2095
210MHz STARTER $2395
36 month business lease $ 94 per month

PowerTower™ Pro Ultimate High-End Power

PowerTower Pro 225 complete
Power 17" Display*
64MB RAM (1GB max)
Macromedia Director™ 5.0

- Upgradeable 225 MHz PowerPC 604e Processor
- 2GB 7200 RPM AV-Capable HD
- 64MB RAM (1GB Max)
- * Exclusive 16x CD-ROM Drive
- * Exclusive 1MB Level-2 Cache
- 8MB IMS Twin Turbo Graphics Accelerator
- Interleaved Memory
- 6 PCI Expansion Slots
- 9 Drive Bays
- 33.6 Global Village Modem
- $2,500 in Bundled Software
- Extended Keyboard and Mouse

MacWEEK

$4695

225MHz STARTER $3695
250MHz STARTER $4495
36 month business lease $ 94 per month

ORDER DIRECT: 800-410-7693

Major Accounts, Education and Government Customers Call 800-952-9251

OR ORDER ONLINE AT OUR NEWLY REDESIGNED WEBSITE AT WWW.POWERCC.COM

PowerComputing

Circle 151 on reader service card

© 1997 Power Computing Corporation. All rights reserved May 1997. Apple, Macintosh and Mac are registered trademarks. The Mac OS and the Mac OS logo are trademarks of Apple Computer, Inc., and are used under license from Apple Computer, Inc. The Mac OS logo is registered in the United States and other countries. The Power Computing logo is a registered trademark of Power Computing Corporation. PowerTower, PowerCenter, and PowerBase are trademarks of Power Computing Corporation. MacBench is a registered trademark of Ziff-Davis, Inc. PowerPC is a trademark of International Business Machines, Corp. Be OS is a trademark of Be Incorporated and is used under license from Be Incorporated. All other brand and/or product names are the property of their respective holders. QuickShip bundles are shipped within 48 hours of credit approval. Power Computing is not responsible for errors in photography or typography. Prices and specifications are valid in the U.S. only and are subject to change without notice. *Visible viewing size 15.7" **Visible viewing size 13.7

JULY 1997

Macworld

Features

LAB TEST
92 **The Mac Wins the Race**
BY LON POOLE AND HOWARD BALDWIN Not so fast, Intel. Macworld Lab pits the fastest PCs against the fastest Macs and proves that despite the MMX blitz, Macs win the speed race.

102 **Macworld's Top 101 Tips**
A variety of experts share their best productivity tips for systems, business, e-mail, graphics, desktop publishing, and the Web to turn you into a powerhouse—and efficient—user.

Energize your Mac's performance with these System-slimming Secrets, page 129.

LAB TEST
117 **17-Inch Screen Stars**
BY PETER M STOLLER A Macworld Lab bonanza: 31 color 17-inch monitors tested and rated, plus buying advice on how to choose the monitor best for you. The good news? Seven excellent choices under $800.

Macworld Lab tests a full spectrum of 17-inch color monitors, page 117.

News

LAB TEST
30 **First Exponential Chip Tests**
Speed questions dog the first 450MHz CPU.

LAB TEST
31 **The Smallest PowerBook**
A hands-on look at Apple's PowerBook 2400c subnotebook.

Sneak Peek
36 **Painter 5**
Eye-catching effects enhance the newest version.

Apple's MessagePad 2000 reviewed in all its pricey glory, page 69.

36 **Thriving in an NT World**
Keeping your Mac in an increasingly NT-dominated office.

43 **New Products**

ON THE COVER
Photograph by Robert Cardin; screen image by Graphistock

Digital-camera show-down: Five cameras go head-to-head in Reviews, page 48.

Opinion

17 Letters

25 State of the Mac
BY ADRIAN MELLO Apple and the changing hardware business.

214 The Desktop Critic
BY DAVID POGUE Mac Libs: another *(adjective)* column.

This PaperPort does color—the speedy little Strobe, page 34.

Secrets

129 System Software Snip and Clip
BY JOSEPH SCHORR Trim down your System Folder for better system performance.

131 Quick Tips
BY LON POOLE Tips, tricks, and shortcuts.

12 How to Contact Macworld

Buyers' Tools

83 Star Ratings
Macworld's ratings for hundreds of hardware and software products at a glance.

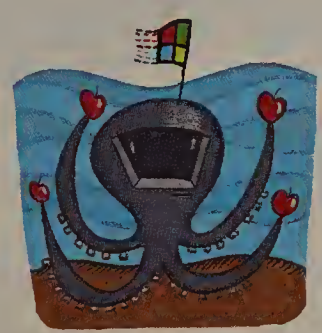
LAB TEST
88 Mac Superguide
Macworld's guide to every Mac system and clone on the market, lab tested and Star Rated.

Media

135 Working with Clip Media
BY JIM HEID Choose, use, and customize off-the-rack media.

138 Publishing Workshop
BY DAVID BLATNER Tricks to get your Photoshop 4.0 work done faster (not just better).

140 Graphics Workshop
BY CATHY ABES Maximizing masking techniques in Photoshop.



Mac networking: Surviving in an NT office world, page 36.

Reviews

48 ★★★★/7.3 **Apple QuickTake 200;** ★★★/6.1 **Epson PhotoPC 500;** ★★/4.9 **Kodak DC25;** ★★★★/7.4 **Olympus D-300L;** ★★★★/7.1 **Sony DSC-F1**
Digital cameras compared

52 ★★★★/8.2 **Claris Emailer 2.0**
E-mail organizer

54 ★★★/6.9 **OrangePC 540;** ★★/4.7 **SoftWindows 95 4.0**
Windows 95–on-a-Macintosh solutions compared

56 ★★★★/8.1 **CyberStudio 1.0**
Web-page authoring tool

58 ★★/3.7 **CD Speedster;** ★/1.5 **d-Time**
CD-ROM accelerators compared

60 ★★/3.9 **Image Alchemy PS 2.1.4;** ★★/4.0 **Tailor 2.0**
PostScript utility packages compared

62 ★★★★/8.2 **QuicKeys 3.5.2**
Macro program

62 ★★★★★/9.3 **Conflict Catcher 4.01**
System Folder manager

67 ★★★/6.8 **Courier V.Everything 56 K**
x2 fax modem with caller ID

68 ★★/4.8 **FrontPage 1.0**
Web-page authoring suite

68 ★★★★/7.8 **Spreadsheet 2000 2.01**
Beefier version of LKISS

69 ★★★/5.0 **MessagePad 2000**
Apple's latest Newton

70 ★★★★/7.5 **Internet Gateway 3.7.3**
Router shares a single Internet account across a network

70 ★★★/5.1 **CometPage 1.0.5**
Site-building templates and macros

72 ★★/3.8 **Common Ground 3.0.1**
Portable-document software

74 ★★★★/8.1 **MATLAB 5**
Engineering-oriented math software

76 ★★★/5.8 **Bookends Plus 4.0**
Web-ready reference-management tools

78 ★★★/6.9 **Phantom 2.0**
Search-engine–building tool

80 ★★★★/8.4 **QuickStream Pro**
Remote-access server with Web-based administration

80 ★★★★/7.4 **Pro FORTRAN 5.0**
FORTRAN compiler suite

(Bonk!)

(Timberrr!)

Who better to make your Mac than the company who designed the PowerPC™ chip?

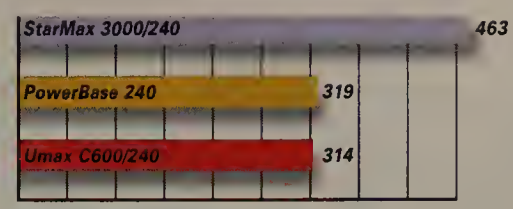
If we can ship 50,000 in just seven weeks, we can ship yours now.

*Our MacUser "Best Buy" StarMax 3000/160 MHz computer is now a better buy at 180 MHz and $1,249.**

Our five-year limited system warranty is four years longer than our competitors.

We've been committed to the Mac OS since the very beginning. And the innovation won't stop here. Together with Apple, we'll bring even more amazing things to the Mac world.

With Mac® clones popping up everywhere, wouldn't it be great to know there's one made by someone you already trust? We thought so too. Which is why we've introduced the StarMax™ Mac® OS-based line of computers. From 180 MHz to 240 MHz, 1.2 GB to 2.5 GB hard drives and starting at $1,249.* And with Motorola Six Sigma quality behind them, every StarMax comes with a five-year limited system warranty—and nobody can clone that. Plus StarMax outperformed similarly configured Mac OS computer systems by as much as 45% in recent tests. It's no wonder more StarMax computers were sold in our first 100 days than any other Mac-compatible in history. So get your own StarMax Mac OS computer by calling us or visiting our website. And put yourself ahead of the crowd.



MacBench® Floating-Point Performance Ratings†

StarMax. The knockout in a crowd of knockoffs.

1-800-759-1107 ext. MWD · www.mot.com/starmax

MOTOROLA
Computer Group

©1997 Motorola, Inc. All rights reserved. Motorola and Ⓜ are registered trademarks and StarMax is a trademark of Motorola, Inc. PowerPC and the PowerPC logo are registered trademarks of and are used under license from International Business Machines Corporation. Mac and Mac OS are registered trademarks of Apple Computer, Inc. MacBench is a registered trademark of Ziff-Davis Publishing Co. All other brand and product names are the trademarks or registered trademarks of their respective holders. *Manufacturer's suggested retail price. †MacBench 4.0, 1997.

What you never thought possible.™

Circle 207 on reader service card

AnthroCarts®!

AnthroCarts are *so* flexible. You have **dozens of shapes and sizes** to choose, plus over **50 accessories** to configure your cart exactly the way *you* want.

And they have a **Lifetime Warranty**! Made of steel and high density particle board, these AnthroCarts are as tough as nails.

See them all in our catalog, then call us direct to order. We'll ship to you the very next business day!

Call for your free catalog:

800-325-3841

6:00 AM to 6:00 PM PST, M–F

ANTHRO®

Anthro Corporation®
Technology Furniture®
10450 SW Manhasset Dr.
Tualatin, OR 97062
Fax: 800-325-0045
http://www.anthro.com

Since 1984. Prices from $299. For a lower cost line for the home, ask for our Compact catalog. GSA contract. Available for OEM applications. Anthro, AnthroCart and Technology Furniture are registered trademarks of Anthro.

Macworld

PRESIDENT AND CEO	Colin Crawford
ASSISTANT TO THE PRESIDENT	Sharon Sanderson
CHIEF OPERATING OFFICER	Stephen Daniels
BUSINESS MANAGER	Lisa Buckingham
FINANCIAL ANALYST	Eos de Feminis
DIRECTOR OF HUMAN RESOURCES	Shelly Ginenthal
EMPLOYEE RELATIONS MANAGER	Marisa Chow
NETWORK MANAGER	Wally Clegg
MANAGER OF TECHNICAL SERVICES	Theodore Kim
IS TECHNICIAN	Dave Johnson
PROGRAMMER/ANALYST	Frederic Desbois
INFORMATION SYSTEMS COORDINATOR	Ginger von Wening
ACCOUNTING/OPERATIONS	Pat Murphy
ACCOUNTING/FACILITIES MANAGER	Michelle Reyes

Macworld is a publication of International Data Group, the world's largest publisher of computer-related information and the leading global provider of information services on information technology. International Data Group publishes over 275 computer publications in over 75 countries. Sixty million people read one or more International Data Group publications each month. International Data Group's publications include: **ARGENTINA:** Buyer's Guide, Computerworld Argentina, PC World Argentina; **AUSTRALIA:** Australian Macworld, Australian PC World, Australian Reseller News, Computerworld, IT Casebook, Network World, Publish, Webmaster; **AUSTRIA:** Computerwelt Osterreich, Networks Austria, PC Tip Austria; **BANGLADESH:** PC World Bangladesh; **BELARUS:** PC World Belarus; **BELGIUM:** Data News; **BRAZIL:** Annuário de Informática, Computerworld, Connections, Macworld, PC Player, PC World, Publish, Reseller News, Supergamepower; **BULGARIA:** Computerworld Bulgaria, Network World Bulgaria, PC & MacWorld Bulgaria; **CANADA:** CIO Canada, Client/Server World, ComputerWorld Canada, InfoWorld Canada, NetworkWorld Canada, WebWorld; **CHILE:** Computerworld Chile, PC World Chile; **COLOMBIA:** Computerworld Colombia, PC World Colombia; **COSTA RICA:** PC World Centro America; **THE CZECH AND SLOVAK REPUBLICS:** Computerworld Czechoslovakia, Macworld Czech Republic, PC World Czechoslovakia; **DENMARK:** Communications World Danmark, Computerworld Danmark, Macworld Danmark, PC World Danmark, Techworld Denmark; **DOMINICAN REPUBLIC:** PC World Republica Dominicana; **ECUADOR:** PC World Ecuador; **EGYPT:** Computerworld Middle East, PC World Middle East; **EL SALVADOR:** PC World Centro America; **FINLAND:** MikroPC, Tietoverkko, Tietoviikko; **FRANCE:** Distributique, Hebdo, Info PC, Le Monde Informatique, Macworld, Reseaux & Telecoms, WebMaster France; **GERMANY:** Computer Partner, Computerwoche, Computerwoche Extra, Computerwoche FOCUS, Global Online, Macwelt, PC Welt; **GREECE:** Amiga Computing, GamePro Greece, Multimedia World; **GUATEMALA:** PC World Centro America; **HONDURAS:** PC World Centro America; **HONG KONG:** Computerworld Hong Kong, PC World Hong Kong, Publish in Asia; **HUNGARY:** ABCD CD-ROM, Computerworld Szamitastechnika, Internetto online Magazine, PC World Hungary, PC-X Magazin Hungary; **ICELAND:** Tolvuheimur PC World Island; **INDIA:** Information Communications World, Information Systems Computerworld, PC World India, Publish in Asia; **INDONESIA:** InfoKomputer PC World, Komputek Computerworld, Publish in Asia; **IRELAND:** ComputerScope, PC Live!; **ISRAEL:** Macworld Israel, People & Computers/ Computerworld, **ITALY:** Computerworld Italia, Macworld Italia, Networking Italia, PC World Italia; **JAPAN:** DTP World, Macworld Japan, Nikkei Personal Computing, OS/2 World Japan, SunWorld Japan, Windows NT World, Windows World Japan; **KENYA:** PC World East African; **KOREA:** Hi-Tech Information, Macworld Korea, PC World Korea; **MACEDONIA:** PC World Macedonia; **MALAYSIA:** Computerworld Malaysia, PC World Malaysia, Publish in Asia; **MALTA:** PC World Malta; **MEXICO:** Computerworld Mexico, PC World Mexico; **MYANMAR:** PC World Myanmar; **NETHERLANDS:** Computer! Totaal, LAN Internetworking Magazine, LAN World Buyers Guide, Net, Macworld Netherlands, WebWereld; **NEW ZEALAND:** Absolute Beginners Guide and Plain & Simple Series, Computer Buyer, Computer Industry Directory, Computerworld New Zealand, MTB, Network World, PC World New Zealand; **NICARAGUA:** PC World Centro America; **NORWAY:** Computerworld Norge, CW Rapport, Datamagasinet, Financial Rapport, Kursguide Norge, Macworld Norge, Multimediaworld Norway, PC World Ekspress Norge, PC World Nettverk, PC World Norge, PC World ProduktGuide Norge; **PAKISTAN:** Computerworld Pakistan; **PANAMA:** PC World Panama; **PEOPLES REPUBLIC OF CHINA:** China Computer Users, China Computerworld, China InfoWorld, China Telecom World Weekly, Computer & Communication, Electronic Design China, Electronics Today, Electronics Weekly, Game Software, PC World China, Popular Computer Week, Software Weekly, Software World, Telecom World, and online Webzine China Computerworld Daily; **PERU:** Computerworld Peru, PC World Profesional Peru, PC World SoHo Peru; **PHILIPPINES:** Click!, Computerworld Philippines, PC World Philippines, Publish in Asia; **POLAND:** Computerworld Poland, Computerworld Special Report Poland, Cyber, Macworld Poland, Networld Poland, PC World Komputer; **PORTUGAL:** Cerebro/PC World, Computerworld/Correio Informático, Dealer World Portugal, Mac*In/PC*In Portugal, Multimedia World; **PUERTO RICO:** PC World Puerto Rico; **ROMANIA:** Computerworld Romania, PC World Romania, Telecom Romania; **RUSSIA:** Computerworld Russia, Mir PK, Publish, Seti; **SINGAPORE:** Computerworld Singapore, PC World Singapore, Publish in Asia; **SLOVENIA:** Monitor; **SOUTH AFRICA:** Computing SA, Network World SA, Software World SA, **SPAIN:** Communicaciones World España, Computerworld España, Dealer World España, Macworld España, PC World España; Sri Lanka: Infolink PC World; **SWEDEN:** CAP&Design, Computer Sweden, Corporate Computing Sweden, Internetworld Sweden, it.branschen, Macworld Sweden, MaxiData Sweden, MikroDatorn, Nätverk & Kommunikation, PC World Sweden, PCaktiv, Windows World Sweden; **SWITZERLAND:** Computerworld Schweiz, Macworld Schweiz, PCtip; **TAIWAN:** Computerworld Taiwan, Macworld Taiwan, NEW ViSION/Publish, PC World Taiwan, Windows World Taiwan; **THAILAND:** Publish in Asia, Thai Computerworld; **TURKEY:** Computerworld Turkiye, Macworld Turkiye, Network World Turkiye, PC World Turkiye; **UKRAINE:** Computerworld Kiev, Multimedia World Ukraine, PC World Ukraine; **UNITED KINGDOM:** Acorn User UK, Amiga Action UK, Amiga Computing UK, Apple Talk UK, Computing, Macworld, Parents and Computers UK, PC Advisor, PC Home, PSX Pro, The WEB; **UNITED STATES:** Cable in the Classroom, CIO Magazine, Computerworld, DOS World, Federal Computer Week, GamePro Magazine, InfoWorld, I-Way, Macworld, Network World, PC Games, PC World, Publish, Video Event, THE WEB Magazine, and WebMaster; online Webzines JavaWorld, NetscapeWorld, and SunWorld Online; **URUGUAY:** InfoWorld Uruguay; **VENEZUELA:** Computerworld Venezuela, PC World Venezuela; and **VIETNAM:** PC World Vietnam.

The DIAMONDTRON advantage is now even bigger, sharper and clearer.

Introducing the world's first .28mm, 21-inch (19.7" DVI*) aperture grille monitor.

The new Diamond Pro 91TXM (21" CRT/19.7" diagonal viewable image) from Mitsubishi Electronics represents an unprecedented improvement in the way you'll look at monitors from this moment on.

MITSUBISHI DIAMONDTRON™ CRT TECHNOLOGY

Bright, vivid colors with superb contrast. Razor-sharp focus due to Mitsubishi's enhanced electron gun. High refresh rate for flicker-free imagery. On-Screen Display system with intuitive front-panel controls. All in an ergonomic, compact enclosure that fits easily into any workspace.

Best of all, the Diamond Pro 91TXM is available at the estimated selling price of $1,649, including a comprehensive 3-year warranty and support program to keep it working at peak efficiency. The new Diamond Pro 87TXM (17" CRT/16.0" diagonal viewable image) is also available, with an estimated selling price of $829.

Get all the details today.–both on-screen and off–by calling Mitsubishi Electronics at **1-800-843-2515** in the U.S. and Mexico. In Canada call **1-800-387-9630**. *For immediate product specifications call Mitsubishi Qwikfax at* ***1-800-937-2094***. World Wide Web http://www.mitsubishi-display.com

Designed for Microsoft Windows'95 · Mac™ OS · Rated New Media Magazine Awesome · Winners Magazine 1998 Recommended · Info World Top Score · Reseller News Test Center Fall Comdex '96 · MacUser Awards 1996 Editors' Choice Finalist

Award-Winning DIAMONDTRON Technology · Diamond Pro 91TXM

MITSUBISHI DISPLAY PRODUCTS

©1997 Mitsubishi Electronics America, Inc. DIAMONDTRON is a trademark of Mitsubishi Electronics America, Inc.
Microsoft, Windows and the Windows logo are registered trademarks of Microsoft corporation. Mac and the Mac OS logo are trademarks of Apple Computer, Inc.
* DVI: Diagonal viewable image

Circle 261 on reader service card

PC Applications Driving You Bananas?

Put OrangePC® in Your Apple

Sometimes, to keep from going bananas, you must run a PC application on your Mac. The OrangePC® is an expansion card which allows you to run both Mac and PC programs simultaneously. It magically transforms your Apple into a dual computer platform which can support Windows®NT, NeXT® OPENSTEP®, Windows®95, Windows® 3.1 or DOS. It makes thousands of PC applications compatible with your Macintosh system.

If you have a PCI based Performa (7" expansion slot), a full-sized PCI Power Macintosh compatible (12" slot) or a NuBus based Quadra, there's an OrangePC solution that's right for you. Whether you are budget sensitive, or performance hungry, you may select a processor from the low-cost Intel®486 up to our exclusive Intel MMX Pentium® 200MHz.

And, the OrangePC is affordable, with prices starting at $499.

The technical stuff: OrangePC models come in 7" or 12" PCI, and NuBus card types; up to 5x86 133MHz or up to MMX Pentium 200MHz; RAM from 8 to 256MB on board; up to 256K pipeline burst L2 cache; parallel port (for those delightful PC dongles); 2 high speed serial ports; 16 bit Sound Blaster® compatible In/Out; game port; one or two MB of video DRAM.

Call us today, and put an OrangePC in your Apple.

Orange Micro® inc.

"17 Years of Innovation and Excellence"
1400 N. Lakeview Ave., Anaheim, CA 92807
(714) 779-2772 www.orangemicro.com

Circle 33 on reader service card

© Orange Micro, Inc., 1997

Macworld

EDITOR IN CHIEF — Adrian Mello

EDITORIAL

EXECUTIVE EDITORS — Galen Gruman, Carol Person
DIRECTOR OF EDITORIAL OPERATIONS — Jane Lagas
SENIOR EDITOR/FEATURES — Howard Baldwin
SENIOR ASSOCIATE EDITOR/NEWS — Stephen Beale
SENIOR ASSOCIATE EDITOR/REVIEWS — Anita Epler
SENIOR ASSOCIATE EDITORS — Cathy E. Abes, Elizabeth Dougherty, Tova Fliegel
ASSOCIATE EDITORS — Linda Comer, Suzanne Courteau, Cameron Crotty, Katherine L. Ulrich
ASSISTANT EDITORS — Allyson Bates, Keith A. Mitchell
OFFICE MANAGER — Deborah Weinberger
ADMINISTRATIVE ASSISTANT — Andrea Dudrow
ASSISTANT TO THE EDITOR IN CHIEF — Patricia Carberry-Harris
CONTRIBUTING EDITORS — Mel Beckman, Robert C. Eckhardt, Erfert Fenton, Jim Heid, Steven Levy, Cary Lu, Deke McClelland, Tom Negrino, David Pogue, Lon Poole, Steve Roth, Joseph Schorr, Charles Seiter, Franklin N. Tessler
INTERNATIONAL EDITORS — Matthew JC. Powell, Australia; Vinicius Souza, Brazil; Stig Boesgaard, Denmark; Jean-Philippe Dubrun, France; Andreas Borchert, Germany; Enrico Lotti, Italy; Shohei Nishida, Japan; Oscar Kneppers, Netherlands; Tom Helge Berglie, Norway; Alvaro Ibariez, Spain; Lennart Hakansson, Sweden; Cuno Schneeberger, Switzerland; Bahattin Apak, Turkey; Simon Jary, United Kingdom

LAB

LAB DIRECTOR — Lauren L. Black
SENIOR TECHNICAL ANALYSTS — Matt Clark, Mark Hurlow, Jeff Sacilotto
TECHNICAL ANALYST — Chris Uiterwijk
INVENTORY CONTROLLER — Paul Brown

COPY EDIT AND EDITORIAL PRODUCTION

MANAGING EDITOR — Ruth Henrich
SENIOR COPY EDITOR — Paul-Michael King
SENIOR PRODUCTION EDITOR — Lisa Brazieal
COPY EDITORS — Gail E. Nelson, Elissa Rabellino
ASSISTANT PRODUCTION EDITOR — Jackie Goodman

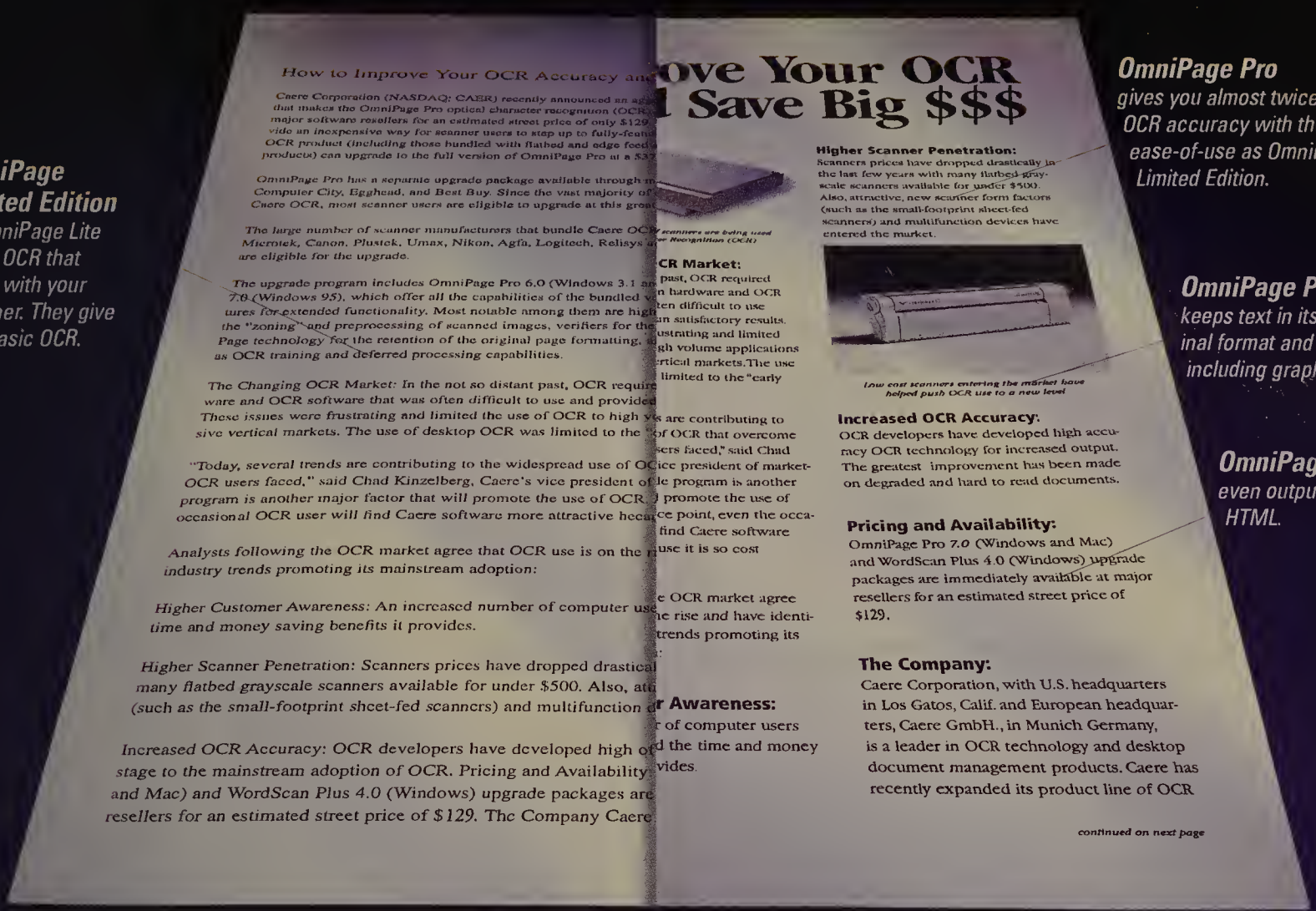
ART AND DESIGN

DESIGN DIRECTOR — Leslie Barton
ART DIRECTOR — Joanne Hoffman
DESIGNER — Tim Johnson
ASSOCIATE ART DIRECTOR — Sylvia Chevrier
ASSOCIATE DESIGNER — Martha Katt
SENIOR DESIGN ASSOCIATE — Belinda Chlouber
DESIGN ASSOCIATE — Aimée Lennig

ONLINE

MANAGER, ONLINE — Paul Devine
DIRECTOR OF ONLINE DEVELOPMENT — Jeff Julian
CIRCULATION MANAGER — Elizabeth Jensen
NATIONAL ACCOUNTS MANAGER — Ed Ramirez
ONLINE ACCOUNTS MANAGER — Nicholas Harvey
MEDIA COORDINATOR — Jamila Johnson
DESIGN DIRECTOR, ONLINE — Arne Hurty
WEB ADMINISTRATOR — Chip Carman
ONLINE PRODUCER/EDITOR — Karen Liberatore
ONLINE ADMINISTRATOR — Steve Costa
CONTENT ENGINEER — Caius van Nouhuys
ONLINE CONTENT PRODUCER — Matt McAlister
ASSISTANT CONTENT ENGINEERS — Roxanne Gentile, Jessica Graves

New OmniPage Pro 7.0 gives you the recognition you deserve.



How to Improve Your OCR Accuracy an

Caere Corporation (NASDAQ: CAER) recently announced an ag
that makes the OmniPage Pro optical character recognition (OCR)
major software resellers for an estimated street price of only $129.
vide an inexpensive way for scanner users to step up to fully-featu
OCR product (including those bundled with flatbed and edge feed
products) can upgrade to the full version of OmniPage Pro at a $37

OmniPage Pro has a separate upgrade package available through m
Computer City, Egghead, and Best Buy. Since the vast majority of
Caere OCR, most scanner users are eligible to upgrade at this gre

The large number of scanner manufacturers that bundle Caere OCR
Microtek, Canon, Plustek, Umax, Nikon, Agfa, Logitech, Relisys a
are eligible for the upgrade.

The upgrade program includes OmniPage Pro 6.0 (Windows 3.1 an
7.0 (Windows 95), which offer all the capabilities of the bundled v
tures for extended functionality. Most notable among them are high
the "zoning" and preprocessing of scanned images, verifiers for the
Page technology for the retention of the original page formatting, a
as OCR training and deferred processing capabilities.

The Changing OCR Market: In the not so distant past, OCR require
ware and OCR software that was often difficult to use and provided
These issues were frustrating and limited the use of OCR to high vo
sive vertical markets. The use of desktop OCR was limited to the "

"Today, several trends are contributing to the widespread use of OC
OCR users faced," said Chad Kinzelberg, Caere's vice president of
program is another major factor that will promote the use of OCR.
occasional OCR user will find Caere software more attractive hecau

Analysts following the OCR market agree that OCR use is on the r
industry trends promoting its mainstream adoption:

Higher Customer Awareness: An increased number of computer use
time and money saving benefits it provides.

Higher Scanner Penetration: Scanners prices have dropped drastical
many flatbed grayscale scanners available for under $500. Also, att
(such as the small-footprint sheet-fed scanners) and multifunction d

Increased OCR Accuracy: OCR developers have developed high of
stage to the mainstream adoption of OCR. Pricing and Availability
and Mac) and WordScan Plus 4.0 (Windows) upgrade packages are
resellers for an estimated street price of $129. The Company Caere

ove Your OCR
l Save Big $$$

scanners are being used
er Recognition (OCR)

CR Market:
past, OCR required
n hardware and OCR
ten difficult to use
an satisfactory results.
ustrating and limited
gh volume applications
rtical markets.The use
limited to the "early

s are contributing to
of OCR that overcome
sers faced," said Chad
ice president of market-
le program is another
promote the use of
ce point, even the occa-
find Caere software
use it is so cost

e OCR market agree
e rise and have identi-
trends promoting its
:

r Awareness:
of computer users
d the time and money
vides.

Higher Scanner Penetration:
Scanners prices have dropped drastically in the last few years with many flatbed gray-scale scanners available for under $500. Also, attractive, new scanner form factors (such as the small-footprint sheet-fed scanners) and multifunction devices have entered the market.

Low cost scanners entering the market have helped push OCR use to a new level

Increased OCR Accuracy:
OCR developers have developed high accuracy OCR technology for increased output. The greatest improvement has been made on degraded and hard to read documents.

Pricing and Availability:
OmniPage Pro 7.0 (Windows and Mac) and WordScan Plus 4.0 (Windows) upgrade packages are immediately available at major resellers for an estimated street price of $129.

The Company:
Caere Corporation, with U.S. headquarters in Los Gatos, Calif. and European headquarters, Caere GmbH., in Munich Germany, is a leader in OCR technology and desktop document management products. Caere has recently expanded its product line of OCR

continued on next page

OmniPage Limited Edition

OmniPage Pro

OmniPage Limited Edition *or OmniPage Lite is the OCR that came with your scanner. They give you basic OCR.*

OmniPage Pro *gives you almost twice the OCR accuracy with the same ease-of-use as OmniPage Limited Edition.*

OmniPage Pro *keeps text in its original format and layout, including graphics.*

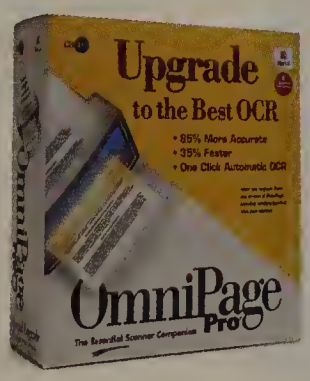
OmniPage Pro *even outputs to HTML.*

Upgrade now to faster, more accurate OCR.

Sure, the OmniPage Limited Edition OCR that came with your scanner is good. In fact, that's why scanner makers like HP, Microtek and Agfa chose it above all others.

But if you want greater accuracy, full-throttle speed and a ton of new time-saving features, then it's time you moved up to OmniPage Pro®.

OmniPage Pro employs a new, more powerful OCR engine to recognize poor copies and degraded faxes.



It integrates seamlessly with your favorite applications like Word, ClarisWorks and more. It even guides you through the OCR process using its AutoOCR Toolbar. All with the simple push of a button.

What's more, you get the advantages of the world's most popular OCR software without learning an entirely new program. So make sure you're getting all the OCR power and accuracy you deserve. Call now to upgrade, or visit a local reseller.

caere®

www.caere.com

Key Feature Comparison	OmniPage Pro	OmniPage Limited Edition
Caere's fastest and most accurate OCR engine	✔	
AutoOCR Toolbar™ for easy, one-button OCR processing	✔	
Apple Guide gives you on-screen interactive help	✔	
Preserves graphics in output text	✔	
OCR from within your favorite applications	✔	✔
Retains original layout	✔	

SPECIAL UPGRADE

$129* CALL TODAY TO ORDER! **800-736-5735** extension 80

Accelerated for Power Macintosh · Mac OS · MW ★★★★★ JUNE 1994 · MacUser ★★★★ · secret card MacWEEK ◆◆◆◆ AUGUST 1994

*Suggested price US $—subject to change. Valid in US & Canada only. Caere, the Caere logo and OmniPage Pro are registered trademarks and AutoOCR Toolbar is a trademark of Caere Corporation © 1996. All other names are the property of their respective holders.

Circle 69 on reader service card

Circle 21 on reader service card

Circle170 on reader service card

Macworld

DISPLAY ADVERTISING SALES

ASSOCIATE PUBLISHER	Matt Sweeney (415/978-3271)
NATIONAL SALES DIRECTOR	Steve Plevin (415/978-3138)
SALES DEPARTMENT ADMINISTRATOR	Eva Bosch (415/974-7310)
SALES/MARKETING SPECIALIST	Glenn Munlawin (415/974-7350)
REGIONAL ACCOUNTS MANAGER	Liz Pabón (415/978-3257)
SALES ASSOCIATE	Jessica Ross (415/267-1799)
NATIONAL ACCOUNTS MANAGER	Karl Elken (415/978-3155)
ACCOUNT EXECUTIVE	Christine Wong (415/978-3192)
ADMINISTRATIVE ASSISTANT	Tobin Duisenberg (415/975-2619)
NATIONAL ACCOUNTS MANAGER	Sara Culley (310/545-0646)
SALES ASSOCIATE	Margaret Level Green (415/267-4577)
NATIONAL ACCOUNTS MANAGER	Cynthia Ramsey (201/243-1197)
NATIONAL ACCOUNTS MANAGER	Paul Bonarrigo (508/370-0832)
NATIONAL ACCOUNTS MANAGER	Lisa Ladle-Wallace (800/779-5622)
ACCOUNT EXECUTIVE	Kathy Poppenhagen (847/398-8141)

CLASSIFIED ADVERTISING SALES

MACWORLD SHOPPER AND DIRECTORY	Niki Stranz (415/978-3105), Carol Johnstone (415/978-3152), Shannon Smith (415/974-7414)

RESEARCH

RESEARCH DIRECTOR	Linda Lawrence
SENIOR RESEARCH ANALYST	Phillip Hibbert
INTERNET RESEARCH ANALYST	Scott Petersen

WORLDWIDE MARKETING

MARKETING DIRECTOR	Cynthia Koral
SENIOR TRADE SHOW/EVENTS MANAGER	Anna Noetzel
TRADE SHOW/EVENTS COORDINATOR	Marjorie Maggenti

CIRCULATION

VICE PRESIDENT/DIRECTOR OF CIRCULATION	Angelina Beitia
SINGLE-COPY SALES DIRECTOR	George Clark
SUBSCRIPTION DIRECTOR	Lori Hitchcock
CIRCULATION MANAGER	Barbara Besser
NEWSSTAND SALES MANAGER	Martin Garchar
DIRECT-MARKETING MANAGER	Kelvin Gee
NEWSSTAND COORDINATOR	Dalia Schwartz
SUBSCRIPTION COORDINATOR	Tom Porcella
PROMOTIONS COORDINATOR	Peter Ho
SUBSCRIPTION INQUIRIES	800/288-6848

PRODUCTION

VICE PRESIDENT/DIRECTOR OF MANUFACTURING	Anne Foley
PRODUCTION MANAGER	Cynthia Neustadt
ASSISTANT PRODUCTION MANAGER	David W. McAferty
DTP COORDINATOR	Clayton Haberman
BILLING INFORMATION MANAGER	So Fong Yip
BILLING ASSISTANT	Lily Cheung

NEW ADOBE® ILLUSTRATOR® 7.0 for MACINTOSH®

NO JOB TOO BIG. NO JOB TOO SMALL.

SEAMLESS INTEGRATION

Works seamlessly with Adobe Photoshop® and PageMaker® like no other illustration software. Learn faster, work faster–same user interface, including shortcuts and menus. Even drag & drop between all three.

WINDOWS AND MACINTOSH, SAME GREAT FEATURES.

It's never been easier to share files with colleagues, clients and service bureaus.

PRECISION CONTROL

Create, transform and align artwork and type exactly the way you want. Adjustable guides, grids and "snap-to" make layout design easier. Unique tools let you wrap type around objects and run type on a path.

UNMATCHED COMPATIBILITY

Support for more than 20 image, graphics and text formats, including TIFF, WMF, CDR, PhotoCD™, GIF89a, MS® Word.

CALL NOW FOR YOUR
$99 UPGRADE
NEW ADOBE ILLUSTRATOR 7.0 FOR MACINTOSH.
LIMITED TIME OFFER

Now there's a way to expand your creative tools on any size job. Adobe Illustrator 7.0. Organize your workspace any way you like with new tabbed palettes, just like the ones in Adobe Photoshop. See how productive you can be by choosing colors with a simple drag-and-drop. Speedy image handling and the ability to link images in virtually any format lets you work faster, with smaller files. And if it's flexibility you're after, Adobe Illustrator 7.0 delivers! Great new features include vertical text, easy multiple master font control, adjustable grids, and support for professional color management systems. Even Web jobs are easier, thanks to RGB color support, URL embedding, and built-in Web-ready color palettes. For more details, call 800-649-3875, extension 31909. Or visit our Web site at www.adobe.com/prodindex/illustrator.

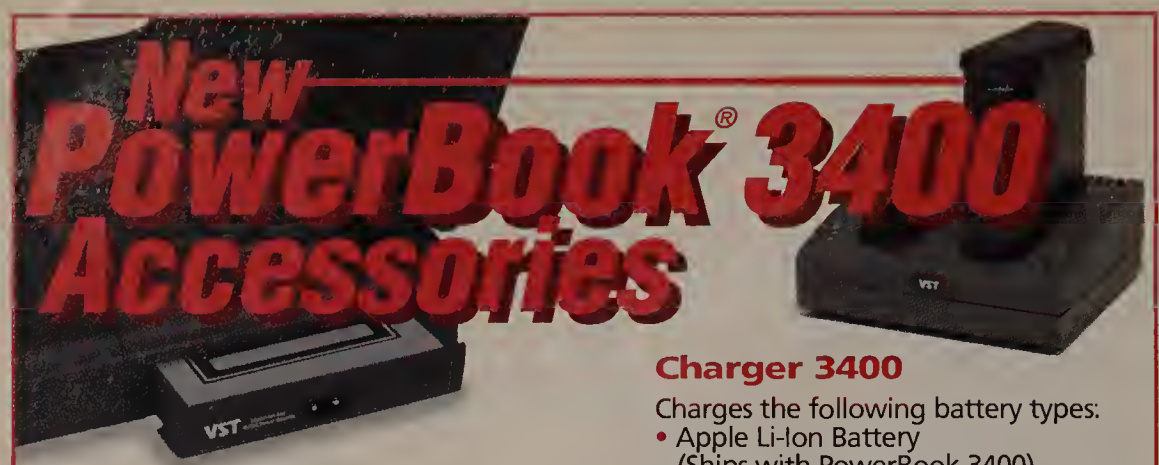
Adobe®

If you can *dream* it, you can *do* it.®

Created with Adobe Illustrator, Photoshop and Dimensions, and Goudy and Helvetica fonts. Adobe, the Adobe logo, Adobe Illustrator, Photoshop, PageMaker, PostScript and "If you can dream it, you can do it." are trademarks of Adobe Systems Incorporated. Window and MS are either registered trademarks or trademarks of Microsoft Corporation. PhotoCD is a trademark of Eastman Kodak Co. All other trademarks are the property of their respective owners. Offer ends 9/1/97. © 1997 Adobe Systems Incorporated. All rights reserved.

Circle 252 on reader service card

New PowerBook® 3400 Accessories



Expansion Bay Internal AC/DC Power Adapter 3400
- Fits into Expansion Bay
- Replaces "brick" style AC and DC Adapter
- Also works as an external AC/DC Adapter

VST Part # EBAD5001.....Available Now

Charger 3400

Charges the following battery types:
- Apple Li-Ion Battery (Ships with PowerBook 3400)
- 190/5300 NiMH Batteries

VST Part # SCH3400.....Available Now

Apple Lithium Ion Battery 3400

This battery is the lightest weight and highest energy density battery available for the PowerBook 3400 Series.
VST Part # BAT3400.....Available Now

Even Better...

The Ultimate Mobility Bundle includes: Charger 3400, Apple Li-Ion Battery 3400 and Apple AC Adapter
VST Part # SCH3403.....Available Now

MacWAREHOUSE 1-800-255-6227

PC Connection 1-800-222-8888

ClubMac 1-800-258-2622

MV02 The Mac Zone 1-800-248-0800

VST TECHNOLOGIES Incorporated

Other 3400 Series Products from VST:
MO Drives, Zip Drives (Avail. Q3, 97), AC Adapters, Expansion Bay Hard Drives, Auto Adapters

125 Nagog Park • Acton, Massachusetts 01720
(508) 263-9700 • Fax (508) 263-9876 • http://www.vsttech.com

Circle 73 on reader service card

The big plus in monitors comes this Summer.

17+2=19

18" DISPLAY

PRINCETON® GRAPHIC SYSTEMS
color your world bigger.
800-747-6249 ext.186
www.prgr.com

2801 S. Yale St. • Santa Ana, CA 92704 • Tel: 800-747-6249 or 714-751-8405 • Fax: 714-751-5736, Fax-on-Demand: 714-751-0168

Circle 25 on reader service card

Macworld

HOW TO CONTACT MACWORLD

Subscription Questions

Phone	Mainland USA 800/288-6848
	All other locations 303/604-1465
Fax	303/604-7644
U.S. Mail	Subscription Services
	P.O. Box 54529, Boulder, CO 80328-4529
America Online	Keyword *Macworld*
WWW	*http://www.macworld.com/community/sub.services.html*
E-mail	*subhelp.macworld@neodata.com*

Macworld Club Questions

Phone	U.S. and Canada 800/895-9545
WWW	*http://www.club.macworld.com*
E-mail	*club_macworld@macworld.com*

REPRINTS AND PERMISSIONS Address requests for reprint orders and for permissions to copy editorial for other purposes to Reprints and Permissions, Editorial Department.

Permission will be granted by the copyright owner for those registered with the Copyright Clearance Center (CCC) to photocopy any article herein—for personal or internal reference use only—for the flat fee of $1.50 per copy of the article or any part thereof. Specify ISSN 0741-8647 and send payment directly to the CCC at 27 Congress St., Salem, MA 01970.

Back Issues of Macworld

Back issues are $7 per issue for U.S. delivery ($12 overseas); prepayment in U.S. funds is required. Make checks or money orders payable to Macworld Magazine and mail along with a written request to Macworld Back Issues, c/o Snyder Newell, P.O. Box 7046, San Francisco, CA 94120-9727. Readers can obtain newsstand premiums by mailing a check for $2.95 (shipping and handling) to Macworld Communications, Newsstand Promotion, 501 Second St., San Francisco, CA 94107. Important: Please state CD title and issue, and include shipping name and address.

Macworld in Microfilm

Macworld is available on microfilm and microfiche from UMI, 300 N. Zeeb Rd., Ann Arbor, MI 48106-1346; 313/761-4700.

Macworld Editorial

Our offices are located at 501 Second St., San Francisco, CA 94107; 415/243-0505, fax 415/442-0766. E-mail: *macworld@macworld.com*.

Readers can contact editors directly via the Macworld forum on America Online (keyword *Macworld*) or Macworld Online's Web site (*http://www.macworld.com*).

LETTERS TO THE EDITOR Direct all comments, questions, and suggestions regarding any aspect of the magazine to *letters@macworld.com*. All mail is read by our editor, but due to the high volume of mail received, we can't respond personally to each letter. We reserve the right to edit all submissions. All letters published in *Macworld* or Macworld Online become the property of *Macworld*.

QUICK TIPS Send your questions or tips on how to use Mac computers, peripherals, or software to the attention of *Quick Tips*, Lon Poole, or e-mail them to *quicktips@macworld.com*. Please include your name, address, and telephone number.

BUGS AND TURKEYS Send descriptions of turkeys (flaws in conception or design) and bugs (defects or flaws in execution) with your telephone number, mailing address, and T-shirt size to the magazine via *letters@macworld.com*. Due to the high volume of reported bugs and turkeys, we can't personally solve or advise on reported conflicts.

WRITING FOR MACWORLD If you're interested in writing for us, send a self-addressed, stamped envelope with a request for our writer's guidelines. Do not send unsolicited manuscripts.

FOUNDER David Bunnell

FOUNDING EDITOR Andrew Fluegelman 1943–1985

Macworld is a publication of Macworld Communications, Inc. *Macworld* is an independent journal not affiliated with Apple Computer, Inc. *Macworld, Macworld Interactive, Macworld Shopper, MW, MW Lab, MW Shopper, The Desktop Critic, Expert Graphics, Quick Tips, Star Ratings, Buyers' Tools, Streetwise Shopper,* and *Conspicuous Consumer* are registered trademarks of International Data Group, Inc. *Power PC World* and *Secrets* are trademarks of IDG, Inc. APPLE, the APPLE LOGO, MAC, and MACINTOSH are registered trademarks, and MACLETTER and POWERBOOK are trademarks of Apple Computer, Inc. Printed in the United States of America. Copyright © 1997 Macworld Communications, Inc. All rights reserved. *Macworld* is a member of IDG Communications, the world's largest publisher of computer-related information.

How To Load A Camera.

12x Zoom Lens with Macro
Equivalent of a 38mm to 460mm zoom on a 35mm camera plus an-inch-away macro. One of the most versatile lenses available on any camera.

Auto or Shutter-Priority
The versatility of a professional camera, the ease of point-and-shoot.

Through-the-lens Color LCD Viewfinder
What you see is what you get.

450k-pixel Progressive Scan Chip
Sony's advanced CCD technology and special image processing produce a 768x576, 24-bit high quality image.

Auto/manual Focus
Full-range automatic for convenience, manual for complete control.

Lithium Ion Battery
For long, dependable use.

In-field review
For instant reassurance that you've got the shot.

SCSI Interface
Fast image transfer direct from the camera.

Built-in Flash
Automatic setting for simplicity, "flash-on" for fill or "flash off" for none.

Removable PC Card Storage
Compatibility with a wide range of computer platforms with standard ATA Type II PCMCIA flash memory card.

JPEG Image Storage
Standard JPEG compression eliminates the need for special software or processing. Compatible with most imaging programs.

Introducing The Portable Digital Still Camera That's Loaded With Features, Not Film.

From the people who started the concept of filmless photography comes the state-of-the-art portable digital camera: the DKC-ID1. It combines the creative control and professional features found in sophisticated film cameras with the immediacy of digital imaging. Digital photography means rapid turnaround, quick return on your investment and a complete digital record. It's easy and immediate. You capture high quality, color-accurate images, then edit, retouch, present, publish or transmit them right from your computer.

PMA 96 DIMA

For more information on picture perfect convenience and quality at a price you can afford call 1-800-472-SONY, ext. ID1 or visit our Web site at http://www.sel.sony.com/SEL/bppg/.

SONY

©1996 Sony Electronics Inc. Reproduction in whole or in part without written permission is prohibited. All rights reserved. Sony is a trademark of Sony.

When we say ViewSonic®

ViewSonic PT813
- 21" CRT Size
  20.0" Viewable
- Aperture Grille Pitch .28mm
- 107kHz Horizontal Scan Rate
- 1600 x 1200 @ 85Hz
  Maximum Resolution
- TCO Compliance
- Professional Series

ViewSonic PT775
- 17" CRT Size
  16.0" Viewable
- Aperture Grille Pitch .25mm
- 96kHz Horizontal Scan Rate
- 1600 x 1200 @ 77Hz
  Maximum Resolution
- TCO Compliance
- Professional Series

ViewSonic GT775
- 17" CRT Size
  16.0" Viewable
- Aperture Grille Pitch .25mm
- 86kHz Horizontal Scan Rate
- Optimum Resolution
  1280 x 1024 @ 80Hz
- TCO Compliance
- Graphic Series

exceed your expectations,

we've got the guts to back it up.

Aperture grill technology that rewrites the spec charts.

ViewSonic's PT813 21" (20" viewable) and PT775 17" (16.0" viewable) set a new standard for apeture grille monitors used in professional applications.

A rather large claim. But one we can make without equivocation because we have the technology and the specs to prove it.

Both monitors achieve breakthrough quality in brightness, color saturation and screen clarity (see spec boxes below for eye-popping details).

Wait, there's more.

After setting the standard for the pros, we did it again for general office and graphic applications. Our new GT775 17" (16.0" viewable) monitor exceeds all your high performance demands with an optimum resolution rate of 1,280 x 1,024 @ 80Hz and a maximum resolution of 1,600 x 1,280 – from design to business presentations to CAD and the Internet.

It doesn't get any better.

And, all ViewSonic monitors are backed by a limited 3 year warranty on CRT, parts labor (the best in the business), as well as an optional Express Exchange℠ Service program that insures 48 hour replacements.

To exceed your highest expectations, call (800) 888-8583 and ask for agent 5847 for the dealer nearest you or visit our website at www.viewsonic.com.

ViewSonic®

ClubMac® 800-258-2622 Source Code: WWS596

CDW 800-339-4239

MacMall 800-560-6800 2FT3651

PC Mac Connection 800-986-2271

The Mac Zone 800-248-0800

MacWAREHOUSE 800-255-6227

(909) 869-7976 Fax: (909) 869 7958 • Internet: www.viewsonic.com • Specifications subject to change without notice • © ViewSonic Corporation 1997 • All rights reserved
Corporate names and trademarks stated herein are the property of their respective companies.

Circle 59 on reader service card

Maybe it's time you broke out of that 11x17 world.

Creatively speaking, nobody likes to work in a box. But if you're still using conventional desktop printers, that's precisely what you're doing.

Croma24™ from ENCAD® can take your ideas much further. It's a versatile inkjet printer capable of producing photo-realistic images in vivid color at widths of up to 24 inches, and lengths of up to 15 feet. A fact that should have you salivating at the possibilities.

Because now, design firms can easily whip out packaging prototypes. Ad agencies can produce full-size storyboards without tiling. And corporate types everywhere can make the big presentation exactly that.

ENCAD Croma24 is easy to operate. It's Mac and PC compatible. And it'll help save time and money by minimizing your reliance on outside service bureaus.

And, ENCAD Croma24 starts at around $2000. So you can unleash your creativity without trampling the folks in Accounting. For more product information, visit our web site at *www.encad.com*. Or call 1-800-45 ENCAD for your nearest Authorized Reseller. Then watch your imagination truly soar.

ENCAD®

© 1997 ENCAD and Croma24 are trademarks of ENCAD, Inc.

Circle 65 on reader service c

Letters

System 7.6: The Good, the Bad, and the Ugly

OS 7.6 MIGHT NOT OFFER MUCH IN new features, but it's an important step for Apple ("What's New in Mac OS 7.6," *News*, April 1997). Your article emphasized that it may cost as much as $129, when in fact for Macintosh users who upgrade regularly (like most of us), the upgrade will cost only $69. I preordered mine the other day in two minutes using Apple's 800 number. Simple and friendly.

JEFF JAY
Northville, Michigan

I AGREE WITH YOUR ASSESSMENT. APple should be offering 7.6 at a nominal fee. I, for one, do not run most of the stuff 7.6 includes. Most of it is already available. I am upgrading to Casady & Greene's Conflict Catcher 4.0 with my money and waiting to see what the next system release offers.

DANNY L. SHOWALTER
Citrus Heights, California

YOUR DESCRIPTION OF MAC OS 7.6 MENtions that "the new system requires virtual memory if you have less than 16MB of physical RAM installed." I have some programs on my Mac Performa 575 (using System 7.5.5 with 12MB of physical RAM)—mostly games for my kids—that won't run unless virtual memory is turned off. Will we users whose Macs have less than 16MB of RAM still be able to run these programs under Mac OS 7.6?

MIKE DURISIN
Midland, Michigan

We checked with our sources at Apple, and it's not supporting that configuration. That doesn't mean it won't work, just that Apple won't guarantee it'll work. Your best bet is to add more RAM. The good news is that RAM prices are superlow right now. You can get a 16MB SIMM for under $100. If that's not enough to convince you, keep in mind that many newer programs recommend at least 16MB of RAM.—Ed.

JEFF NEUMANN

Rhapsody in Blue

WHAT THE NEW OS STRATEGY MEANS to You" (*News*, April 1997) listed the Macs that will run Tempo, Allegro, Sonata, and Rhapsody. Missing from the list were the Performa 6300 (with the new board) and the Power Mac 7100. Why will the 6360 and 7200 be compatible? They seem to be different from the 6300 and 7100 only in CPU speeds.

ROBERT J. RENNIE
Biloxi, Mississippi

The short answer is that the 7200 and 7100 have completely different motherboards. The 6300 is similar to the 6360 but does use some older components.

The reason Apple hasn't committed to having the Rhapsody OS run on NuBus Power Macs is that those systems and the PCI systems use different control chips on their motherboards to handle NuBus, serial ports, and SCSI. When creating an OS, adding support for the specific needs of chips on specific machines is a huge amount of work, and at some point a company has to decide where to draw the line of backward compatibility.

Apple has decided it will not make the effort for pre-PowerPC Macs. It will decide on the non-PCI PowerPC Macs after it has finished making Rhapsody work on current Macs. Depending on how much time and money is left at that point, Apple will decide if it has the resources to take care of the previous PowerPC Macs. That's why Apple won't know for a while what additional systems, if any, Rhapsody will support beyond the ones we listed.—Ed.

CHRP and CHeaPeR?

I AM CURIOUS ABOUT THE CHRP PLATform. Recently I read in *Macworld* that IBM and Motorola had dropped Windows NT for CHRP ("IBM, Motorola Drop NT for PowerPC," *News*, March 1997). Does this mean that a CHRP system can run a modified version of Windows NT? Or can you just buy a copy of Windows NT off the shelf and install it on a CHRP machine without any special code modifications? And if that's true, does that mean Windows 95 will run on a CHRP system? What's the deal?

GREG WALKER
Camarillo, California

REGARDLESS OF HOW GOOD THE MAC OS is now or will be in the future, the majority of consumers want value for their money. I recently upgraded my

continues

DRAW like no other CAD

"This drawing—5hours—from start to finish."
—*Allan Ommerli, Interior Designer*

You want drawings that look like the ones you've always done by hand—or better. Exquisitely detailed. Perfect arrows. Crisp lines. Or maybe a squiggly sketch. You don't want it to look like it was done on a computer.

PowerCADD lets you draw like that, and it doesn't get in your way. Draw floor plans. Machinery. Charts. Sketch a bush. Doodle a cloud. A flower.

You can draw anything with PowerCADD. And it's easy.

PowerCADD

Turn your genius loose. Put some fun back into your life. Order PowerCADD.

Call 910-299-4843 In Canada: 204-453-8111
ENGINEERED SOFTWARE
http:// www.engsw.com Fax: 910-852-2067

Circle 12 on reader service card

CORRECTIONS

- *The SyJet's storage capacity is 50 percent larger than the Jaz drive's, not the Zip drive's (*Reviews, *May 1997).*
- *The Power Mac 9000/200 and 9600/200MP's standard and maximum VRAM is 4MB, not 8MB (in the table, "The Right Options: Apple's New Lineup," in "More Mac for Your Money," April 1997, and* Reviews, *May 1997), lowering the Star Rating to* ★★★★/8.0.
- *All APS systems are shipping with a SCSI-2 internal bus and a 10× CD-ROM drive ("Super Mac Values," May 1997). The CPU speed of the APS MPower 603e180 is 180MHz.*

aging Mac SE/30 to a Power Computing PowerBase 180, and in doing so compared the prices of comparably equipped Windows boxes. For hundreds of dollars less, I could get the same hardware specs on the Windows box. Not only is the computer itself cheaper, but you also have a much wider variety of printers, monitors, other peripherals, and software to choose from. For many consumers, including those making purchases for businesses, it just isn't worth spending more for an easier-to-use system.

The solution to this is clear: Apple should write a version of the Mac OS that runs on a Pentium-based computer. This will do a number of things. First, it will allow the Mac OS to run on virtually every PC out there and therefore expand its potential market to an even larger share than Microsoft's. Second, it will allow consumers to purchase cheaper hardware and give them a greater choice of brands and models. Third, consumers can compare Windows and the Mac OS without risking thousands of dollars.

If many forgo Windows completely, the Mac OS market share will increase, more code will be written, and prices will drop. Finally, if the Mac OS becomes the more popular OS, PC makers such as Packard Bell will start switching their production to PowerPC-based computers, increasing the market for peripherals and lowering prices.

The above may sound like sacrilege to many hard-core Mac types, but as they say, if you can't beat 'em, join 'em.

IAN CROOKS
New Haven, Connecticut

WHATEVER HAPPENED TO MULTIPLATform computers? According to news reports just six months ago, I expected that by now we'd be drooling over Mac machines that would run Windows NT, Unix, the Mac OS, or whatever. These were to be Apple's salvation. Now, is that salvation delayed, or was it all a mirage?

BOB BAMBERG
Sparta, North Carolina

It was only partly a mirage. And it's not *Apple's way of saying, "If you can't beat 'em, join 'em." CHRP systems are not multiplatform computers, meaning they won't run just any OS. They will run the Mac OS, Rhapsody, the BeOS, and possibly IBM's AIX version of Unix. They were originally planned to run Windows NT and OS/2, but these projects have been killed. There are no plans for CHRP machines to run Windows 95—nor have there ever been.*

However, CHRP will offer higher performance, lower cost for parts (which may mean lower prices, or more features for the same price), and the ability to support PC technologies that give Mac owners more access to PC peripherals. See "Apple's Clone Support in Question," News, *June 1997, for more information.—Ed.*

Control Strip—Play Dead

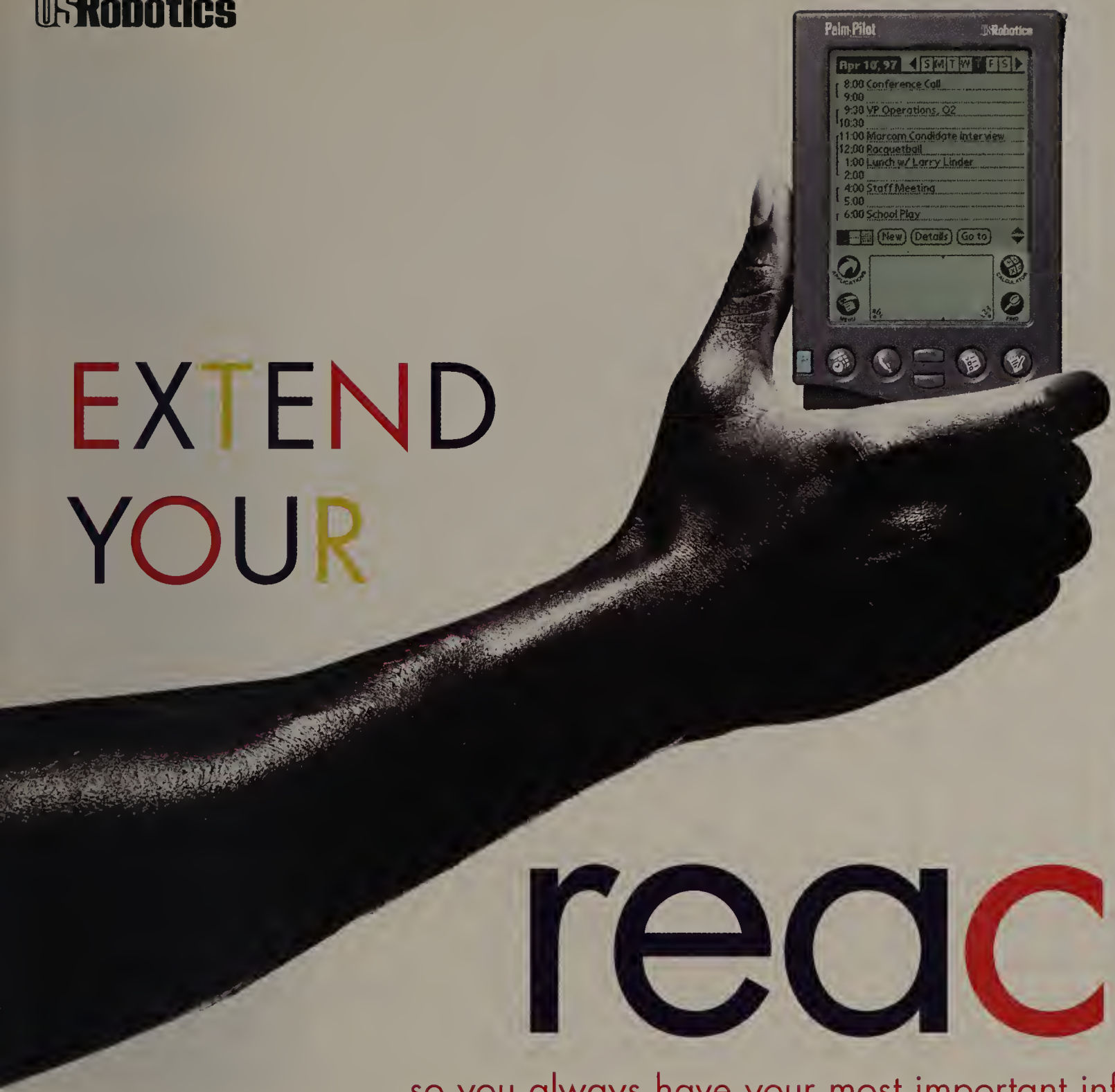
IN RESPONSE TO JOSEPH SCHORR'S ARticle "Control Strip Obedience School," there is actually a much easier way to hide and reveal the Control Strip on the desktop without ever touching the keyboard (*Secrets*, April 1997). Using a $5 shareware module called Terminator Strip written by Ammon Skidmore (*http://www.macworld.com/software/user.interface.html/*), you can set the Control Strip to appear only when your cursor is in the area where the strip normally resides and to miraculously disappear the rest of the time, leaving your desktop free of Control Strip clutter. There are also a few other useful utilities included in the module, such as Restart, Shutdown, and making the Finder inactive. Terminator Strip has been instrumental in keeping the Control Strip alive and well on my desktop.

JIM RISPIN
Pasadena, California

I'M QUITE IMPRESSED WITH THE ARticle on the Control Strip and would like the chance to check it out. But when I did a Find File on my hard drive for *con-*

continues

U.S. Robotics®



EXTEND YOUR reach

so you always have your most important information.

You have a need— to update, to enter, to access your information, and all away from your Macintosh® computer. The new PalmPilot™ connected organizer is how you do it. PalmPilot puts your schedule, contacts, memos, and e-mail;** right in your hand. And HotSync™ technology lets you synchronize that data with your Macintosh. PalmPilot is the one link to your most important information. Anywhere.

Use the personal information management software included, or choose the optional link to Now Up-to-Date & Contact (sold separately).

Call 1-800-881-7256 ext. 22 or visit our web site at www.usr.com/palm for the PalmPilot retailer nearest you.

*The average U.S. street price for PalmPilot Personal Edition is $299. The average U.S. street price for PalmPilot Professional Edition is $399. PalmPilot MacPac, required for Macintosh connectivity, is sold separately at an average U.S. street price of $14.95.
**Requires HandStamp™ for PalmPilot or other third party solution, the PalmPilot Modem, and an internet connection (sold separately). Expense feature not supported on Macintosh. © 1997 U.S. Robotics. All rights reserved. U.S. Robotics and the U.S. Robotics logo are registered trademarks, and HotSync, PalmPilot, and the PalmPilot logo are trademarks of U.S. Robotics and its subsidiaries. All other brands and product names are trademarks or registered trademarks of their respective holders.

PalmPilot™

PalmPilot Personal $299*

Backlit display for low-light viewing

Instantly syncs data with your Macintosh

Stores thousands of entries

User upgradeable to Professional Edition

PalmPilot Professional $399*

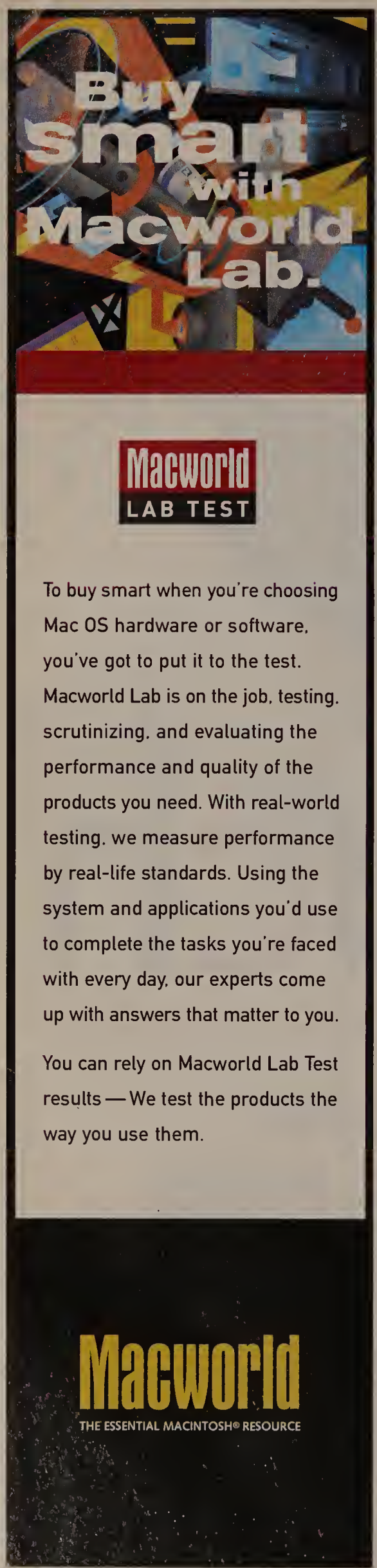
All PalmPilot Personal features plus:

Internet ready (TCP/IP support)

Twice the memory

PalmPilot MacPac (required) $14.95*

Everything you need to get your Macintosh connected



trol strip, nothing came up. The article said, "System 7.5.5 comes with a half-dozen standard Control Strip modules to handle tasks . . ." Does the Control Strip come with System 7.5.5 only if the system software was purchased rather than downloaded? Or did I not get everything?

RHONDA NADEAU
Rochester, New Hampshire

The Control Strip is included with System 7.5.3 and later, but it isn't installed by default. So, whether you upgraded to System 7.5.5 yourself or you purchased a machine that came with System 7.5.3, most likely you will have to use the installer and click on the Custom Install option, look for Control Strip, and select it. This should also be true if you downloaded your system update.—Ed.

More to Life Than the Internet?

THIS MAY COME AS A SHOCK TO SOME people, but not every business relies on Web pages and the Internet to exist. As the CEO of a Mac-based company, I am concerned about fast, stable databases to handle my billing and customer-service needs, and an accounting package that is quick and reliable. I wonder if the development team at Claris is working to make FileMaker 4.0 faster, or is being Internet savvy their only concern?

The consensus appears to be that our next OS will be whichever Web browser we choose. I want (and need) an operating system that is fast and stable. I like the Internet—e-mail is a great convenience and Web pages are cool—but I care a lot more about software and an OS that will help me run my business. It seems that major software upgrades consist of better Internet integration and little else. I hope developers don't lose sight of business users who have existed long before the Internet came around.

JONATHAN KRUTCHIK
via Macworld Online

The Internet has just added a new dimension to the way we work with computers. Naturally, companies want their applications to take advantage of all that the Internet and the Web have to offer their customers. It's not surprising that this is where a lot of upgrade focus has been over the last year or two.

As for FileMaker Pro 4.0, I couldn't care less about Internet support, as long as Claris does something about portal sorting.—Ed.

Multimedia Know-How

I JUST FINISHED READING JIM HEID'S "Online On Time" (April 1997), and I realized I should stop what I was doing and drop you a line to commend you on the clarity and helpfulness of his articles.

It seems as though whenever I begin to look at an emerging field of hot Mac technology—whether it's Web-database publishing, QuickTime VR, or MIDI authoring—and begin to get bogged down in the technical complexities, along comes an article in *Macworld* offering a high-level conceptual overview and clarification of the most perplexing issues involved. Heid always has the right amount of coverage to enlighten a basic Mac lover on the crucial matters and reinstill the hope that it's still possible to really do something with this machine.

What I find perhaps the best feature of Heid's articles is the sidebars that schematically describe the development and authoring processes involved. This is something usually lacking in all the articles, white papers, and manuals that one must slog through to get a basic understanding of newer technologies. Thanks, Jim Heid, and keep them coming.

JASON VOIGT
via Macworld Online

Step Right Up, Win a Prize

WHILE VISITING A LOCAL EXPO FOR home and garden stuff, my wife and I came upon a booth for a popular local radio station. The booth was titled "Countdown 2000." Visitors could win prizes that were considered "The Best of Everything." And what did my eyes discover but an Apple Performa 6400 being offered in the computer category. Ah, a sight to bring tears of joy to the eyes.

STEVE GRENDZINSKI
Pittsburgh, Pennsylvania

Letters should be sent to *Letters*, Macworld, 501 Second St., San Francisco, CA 94107; via fax, 415/442-0766; or electronically to CompuServe (*70370,702*), MCI Mail (*294-8078*), America Online (keyword *Macworld*), AppleLink (*Macworld1*), or via the Internet (*letters@macworld.com*). Include return address and daytime phone number. Due to the high volume of mail received, we can't respond personally to each letter. We reserve the right to edit all letters. All published letters become the property of *Macworld*. m

SELECTING THE BEST GRAPHICS PROGRAM JUST BECAME A NO-BRAINER

A mixture of tools so powerful...

we should put asbestos gloves in every box!

CANVAS 5™
Complete Illustration, Photo Editing and Page Design

Stop toying with feeble graphics programs that sap your creative energy. Canvas 5 puts everything you need to realize your artistic vision into one integrated program that's ready to rock the second inspiration hits. • Say goodbye to concentration-zapping "launch and quit" cycles. With Canvas 5, absolutely stunning illustration, photo editing, and page design tools are always right at your fingertips. • In addition, Canvas 5 works with any file (from Photoshop™ to CorelDraw™ to GIF, TIFF, and JPEG) and any Photoshop-compatible plug-in. You also get over 20,000 clip art images and 2,000 premium URW™ fonts. • Simple, flexible, and relentlessly versatile, Canvas 5 is an industrial-strength graphics tool. So what are you waiting for? Put the awesome power of Canvas 5 under your creative control today.

If you already own a graphics application, trade up to Canvas 5 for just $149.95. See your favorite reseller, or visit us at **www.deneba.com** for complete product information and secure online ordering. For a Canvas 5 dealer near you, or to order by phone, call **1-800-6 CANVAS** or **305-596-5644**.

©1997 Deneba Software. Canvas is a trademark of Deneba Software. All other company names, product names, trademarks and registered trademarks are the property of their respective holders. Limited time offer subject to change without notice.

800.6.CANVAS

BYTE Best of Comdex 96 Winner Best Application Software

MacUser Awards Editors' Choice 1996 Finalist

Windows Magazine WWWW

PC Computing ★★★★

DENEBA

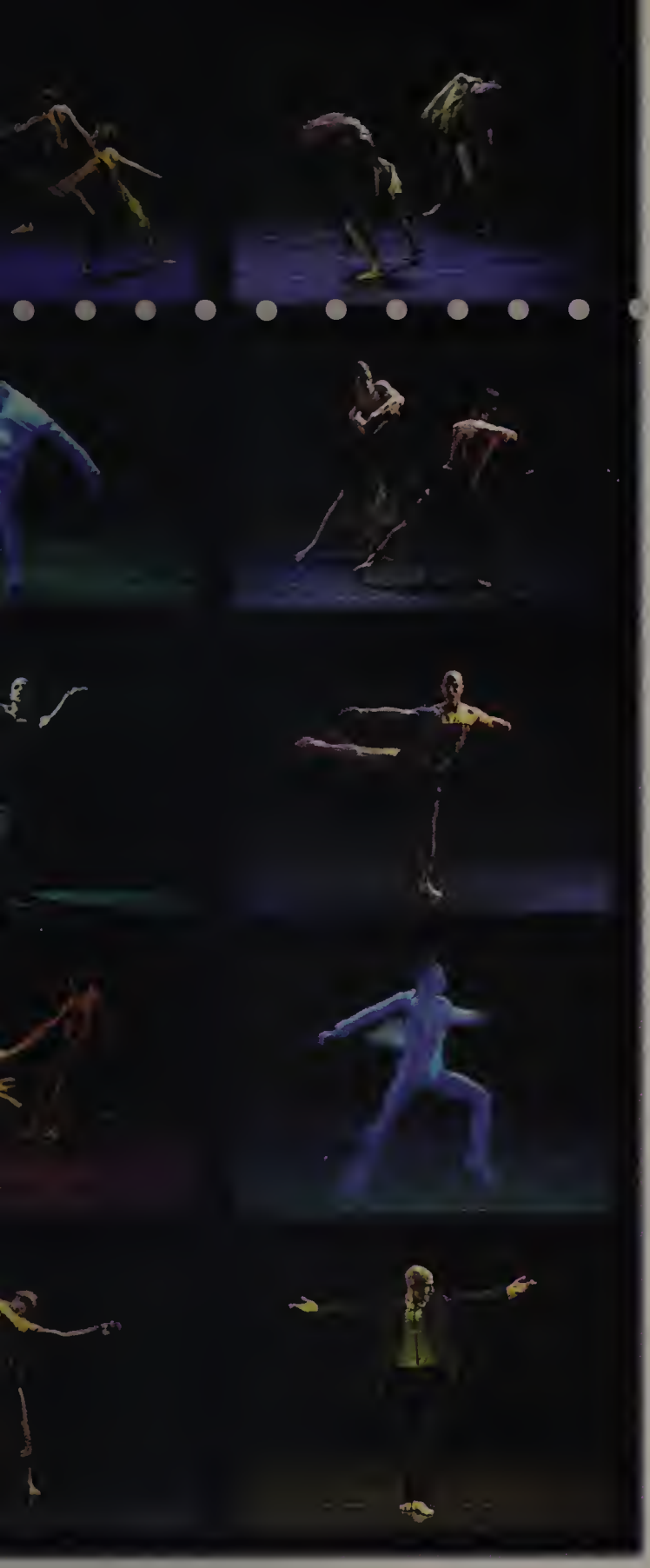
Circle 57 on reader service card

Express Yourself! . . . . .

Stephen Petronio, Artistic Director, Stephen Petronio Dance Company, New York, uses a SuperMac C600.

Mac™OS

You'd be amazed what people are using SuperMac C600 computers for these days. ***Sure*** – they're still great for graphics, spreadsheets, word processing and web surfing... but some users have pushed the envelope and applied our cutting-edge technology to expressions you might not expect.



UMAX®
Computer Corporation

1 **C600 KEY FEATURES**

- Fast, Powerful Mac OS
- Expandable & Upgradeable
- Easy-to-use • Affordable

2 **C600 BUNDLED SOFTWARE**

- Claris Works
- Intuit Quicken SE
- Adobe Pagemill
- EarthLink Network Total Access
- Conflict Catcher 3.0
- NOW Utilities
- NOW Up-to-Date & Contact
- Cypress Research Megaphone
- Power FPU
- MINDSCAPE Grolier Encyclopedia
- MICROMAT TechTool Pro
- NowWhat Software 3D Talking Globe
- NowWhat Software The Cities Below
- FWB CD-ROM & HDTool Kit PE

3 **High-Upgradeability**

SuperMac J700

SuperMac C600

SuperMac S900

MacWeek

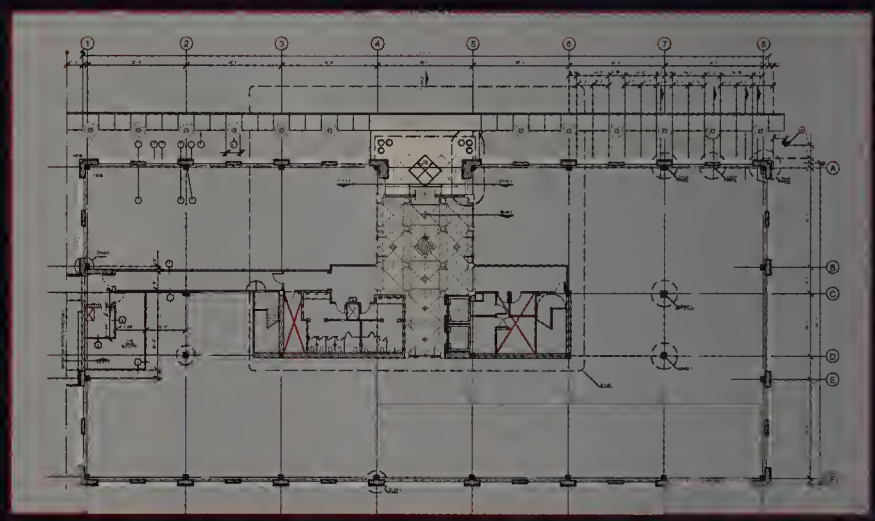
CALL 888-625-UMAX *or visit us @ http//www.supermac.com*

PowerPC

© 1997 All rights reserved. SuperMac is a registered trademark licensed to UMAX Computer Corporation. ▸47470 Seabridge Dr. Fremont CA 94538. Tel: (800) 232-8629. Fax: (510) 623-7350
Mac and the MacOS logo are trademarks of Apple Computer, Inc., used under license. PowerPC and the PowerPC logo are registered trademarks of International Business Machines Corporation.Limited time offer. While supplies last. Monitor not included

Circle 99 on reader service card

The Easiest, Most Cost-Effective



Way to Design

—Audience Vote at the Designers CAD Shoot-Out

The general-purpose MiniCad went toe-to-toe against industry-specific CAD programs nearly six times as expensive—and came out on top—at the first-ever Designers CAD Shoot-Out for Architectural CADD Systems. In this advent of "architecture as a spectator sport," the audience at Boston's World Trade Center awarded MiniCad 6, fittingly, six first-place awards:

- Most Cost Effective
- Easiest to Use
- Best at Cross-Platform Operation
- Best Floor Plans
- Best Elevations
- Best Sections

MiniCad also placed a close third in the Overall Winner category (garnering 21% of the audience vote compared to Arris' 25% and ArchiCad's 24%), beating out AutoArchitect, Microstation Triforma, AllPlan, Architrion, and DataCAD. Even more impressive: MiniCad was the only software program running on both a Macintosh and a Windows machine during the event. This recent success is not surprising. For years MiniCad has been the top-selling CAD program on the Macintosh, winning industry awards worldwide. And the reviews for the recently released Windows version have all been emphatic.

To find out more about the CAD Shoot-Out or how professionals in more than 80 countries have used MiniCad—designing everything from a guitar to a zero-gravity manufacturing device; building houses, luxury high rises, shopping centers, and hockey arenas; planning the stage set and lighting for worldwide Metallica tours; even helping reconstruct Shakespeare's historic Globe Theatre—check out our web page (www.diehlgraphsoft.com) or call 1-800-413-0935.

MiniCad has a suggested retail price of $795, and it comes with 18 months of free tech support and a 30-day money-back guarantee from participating dealers. MiniCad 6 supports Windows 95, NT, 3.1, and Macintosh OS.

Diehl Graphsoft Inc
Software for Today's CAD Professional

MiniCad is a trademark of Diehl Graphsoft, Inc.
All other brands and product names are trademarks of their respective holders.
Above building designed by David A. Brohnke, Herring & Trowbridge Architects.

MiniCad 6—The only thing small is the price.

Circle 46 on reader service card

by Adrian Mello

Wrestling with Apple's Divided Loyalties

APPLE NEEDS TO SEPARATE ITS HARDWARE AND SOFTWARE DIVISIONS

LAST MONTH I DISCUSSED the possibility of Apple's becoming a software-only company. Whether you agree with this idea or not, it's clear that Apple must produce computers for the next few years. It needs the hardware revenue, and Mac OS licensees need time to build enough computers to sustain the market. Selling both hardware and software creates problems for Apple. It results in a conflict of interest and a level of business complexity that's difficult to manage. I think these problems can be solved, but to do so, Apple must separate its hardware business from its software business.

Apple is in the awkward position of competing with a crucial group of its own customers—system vendors such as Motorola, Power Computing, and Umax who license the Mac OS so they can sell computers. Apple can't afford to alienate its licensees. The Mac market's historical dependence on a single company means that every time Apple makes a bad forecast or bets too much on Performas, the whole market suffers, making it harder for Apple to recover from its own mistakes.

If its licensing effort is to succeed, Apple must start treating its licensees like customers instead of banana republics. The only way Apple can overcome the conflict of interest is to truly separate its software and hardware business into two independent operating units. Apple can operate both, but the two can't be tied together in a way that compromises Mac licensees.

Licensing Strategy

Licensees need to know that Apple will not seek an unfair advantage from its system software business. Although Apple claims that it is fully committed to its licensing efforts, its actions don't always show this commitment. Since Apple began its licensing effort, it has insisted on certifying systems produced by Mac licensees for compatibility. This permits Apple to determine what components, and ultimately what kinds of systems, licensees can offer. For example, Apple has not permitted licensees to encroach on its profitable notebook business. It's obvious why licensees are uncomfortable with the degree to which Apple limits their options, considering that Apple also competes with them for hardware sales.

Apple's divided loyalties are also evident in its current effort to renegotiate its system software licenses. Apple rightfully points out that it hasn't been charging enough to cover the cost of developing the operating system. This puts the Apple hardware business at an unfair competitive disadvantage, since it must charge more for its systems to make up its OS development costs. Licensees agree with Apple on this point.

HANK OSUNA

However, licensees disagree with Apple's attempts to use the fee structure to control the types of computers licensees make and where they market those computers. *Macworld*'s sources claim that Apple has proposed higher fees based on system performance, as well as rebates to encourage licensees to enter new geographical regions or market segments. Apple seems to have backed off from basing fees on system performance but is still holding onto the idea of incentives for licensees to go into new regions and market segments.

Giving Up Control

Apple should abandon its attempts to use licensing terms to get licensees to invest in market expansion. Apple has a right to expect a level playing field. So do its licensees. To create a truly level playing field Apple should avoid exerting undue influence on the licensees' business plans. This is a bad habit that Apple must give up. Instead, Apple should lead a cooperative effort to expand markets through business partnerships and combined marketing efforts.

The reality of the situation is that Apple may need to maintain some advantage in the short term so that it can extract itself from its current financial difficulties. I suspect that Apple's licensees would be more than willing to help with such a transition. For their own success, the licensees need a healthy Apple, but they need Apple as a trusted business partner, not a market overlord.

Managing Complexity

Many of Apple's problems are a result of its failure to manage complexity. If Apple separates its hardware and software businesses, it will have a better chance of succeeding at each. It will be able to compare each business with industry models, making it easier to spot problems and deal with them.

continues

In the past, Apple has viewed itself as a unique company offering unique products. Apple's products *are* special, but that doesn't exempt it from the realities of the computer business. Apple's myopia has proven disastrous. The company didn't take the measures necessary to compete with PC vendors, and then it repeated the mistake with Mac licensees. Under Gil Amelio's leadership, Apple is taking measures to solve some of these problems, but I think Apple still befuddles itself by mixing its software vision with its hardware vision. The key issue is not whether the company will ultimately abandon its hardware business to become a software-only business, but how it handles each.

Computers as Commodities

Gil Amelio doesn't believe the software-only model has much merit. In his words, "the software-only scenario is a very shallow analysis." Amelio believes that Apple's strength lies in keeping hardware and software together. He is convinced that most people will want to buy computers the way they buy stereo systems: a complete system from a single company. Customers don't want to worry about whether they have all the pieces they need or whether some pieces work with other available pieces. Amelio expects computers to become increasingly specific to meet different user needs. As an example, he points to educators, who prefer the all-in-one integration of models like the 5500.

Although Amelio offers a compelling vision of what computing should be like, it has problems. Most customers don't currently choose among computer brands based on how well integrated the components are. They probably should, but they don't. The bulk of computer systems are increasingly sold as commodities—much as in other areas of consumer electronics.

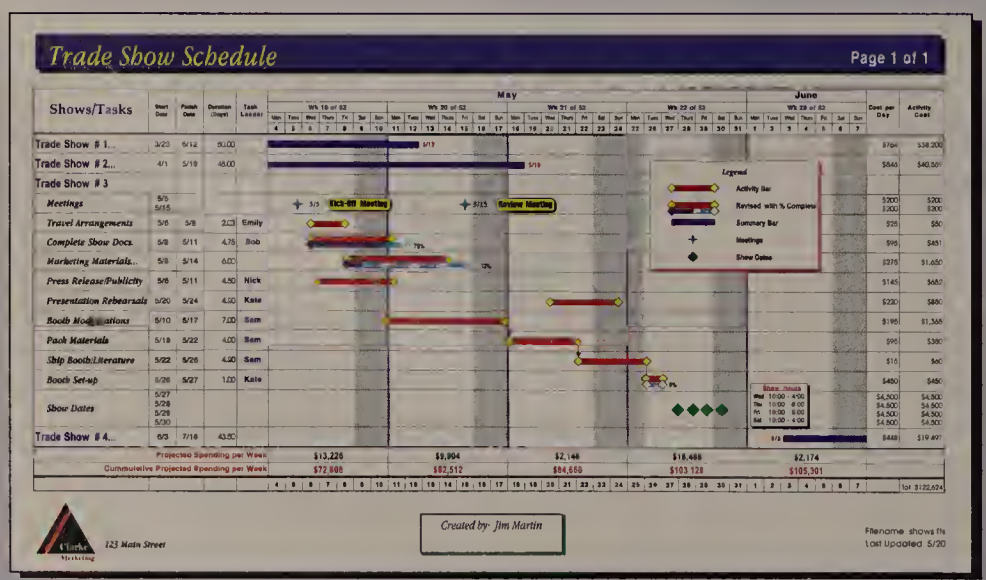
Even well-integrated products are subject to competition and resulting price reductions. Competitors quickly copy successful product ideas, and offer similar features at lower prices. Consumer electronics products may be examples of integrated solutions, but they are also a prime example of commodification. Wintel vendors like Compaq and Hewlett-Packard now sell PCs that combine the necessary hardware and software for particular tasks such as playing multimedia titles (the integration that PC vendors offer is not nearly as good as the Mac's, but it's sufficient to convince most customers of its value). Apple adds some value to its products through integration and industrial design, and therefore can command somewhat of a premium, but it can't avoid the fundamental realities of commodification.

Recipe for Success

The Mac's system software (including its adjuncts such as QuickTime and ColorSync) provides the greatest opportunity for differentiation and is the least subject to commodification. That's why Apple needs to do what's necessary to ensure the success of its software platform. This is the best way to keep all Mac hardware, including Apple's own, a notch above the PC commodity pit.

I'm afraid that Apple's focus on integrated solutions will maintain the incestuous relationship between hardware and software that prevents both parts of its business from growing. I believe that separating the two businesses would improve the performance of both and provide the greatest opportunity for Apple to succeed overall. m

Project Scheduling Made Easy.



It's easy to use. FastTrack Schedule is intuitive and flexible, meeting all your project scheduling needs. It works how you do, letting you schedule projects quickly, easily, but with the control your projects require. You don't have to be an expert in project management to keep your projects organized; you just need the right tool to get it done. It's that simple.

It's easy to learn. Can you afford to waste time learning software over and over again? Now you don't have to. With online help systems, tool tips, and bubble help, you'll have quick solutions at your fingertips. And with FREE and UNLIMITED technical support, you'll always stay on track.

It's easy to buy. We give you a free demo to try the software. If you like it, call us and we'll activate your demo on the fly. Plus FastTrack Schedule is 1/3 of the cost of most project management software, so it will fit your budget as well. Call today for a free demo or download it from our web site!

FastTrack Schedule™
version 5.0

Get on track!
Call to order, for more information or download a FREE DEMO today!
(800) 232-7638

Here are just some of the new

- Calculation Fields • Legend Builder
- Time Period Summaries • Column Summaries
- Export directly to HTML, GIF, JPEG • Choice Lists
- Copy Page vs. Copy Schedule • Right-Clicking
- Finish-to-Finish Linking • Plus many more...

Upgrade to new Version 5.0 Today!

Simple Scheduling. Impressive Power.

AEC Software, Inc. 22611-113 Markey Ct., Sterling, VA 20166, USA • Phone (703) 450-1980 • FAX (703) 450-9786 • http://www.aecsoft.com ©1997 AEC Software, Inc. All rights reserved Macintosh is a registered trademark, and Power Macintosh is a trademark of Apple Computer, Inc.

Circle 203 on reader service card

Clean up your image.

Kai's Photo Soap™

METATOOLS PRESENTS NEXT GENERATION SOFTWARE KAI'S PHOTO SOAP

STARRING REALTIME ZOOM & PAN AMAZING TRUE OBJECT TOOLS AND SERIOUS FUN

CORRECT AND ENHANCE PICTURES VIA EXTREME MATH WITH EASE LIKE A PRO

ANYONE CAN TOUCH UP DETAILS WITH REVOLUTIONARY BRUSHES KILLER PRICE

©1997 MetaTools, Inc. 6303 Carpinteria Ave., Carpinteria, Santa Barbara County, CA 93013 • Phone 800-472-9025 Ask for Dept. SM06
Fax 805-566-6367 • www.metatools.com • Kai's Photo Soap is a trademark of MetaTools, Inc.

Circle 5 on reader service card

The National Software Testing Laboratory, Inc. (NSTL) found the EPSON Stylus Color 600 outperforms avg. speeds of the HP DeskJet 694C by 31% and the Canon BJC-4200 by 38%. The EPSON Stylus Color 800 outperforms avg. speeds of the HP DeskJet 870Cxi by 25%. Print speeds tested with Windows 95 and Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Adobe PageMaker and Adobe Photoshop. NSTL report available by calling 1-800-GO-EPSON. Prices may vary. EPSON and EPSON Stylus are registered trademarks of Seiko Epson Corp. Micro Piezo is a trademark of Epson America, Inc. © 1997 Epson America, Inc.

AT 1440 DPI
YOU SEE A FAKE.

YOU'VE GOT TO SEE IT IN EPSON COLOR.

Presenting the extraordinary new EPSON® 1440 dpi printers. Outrageous Photo Quality color. Microscopic detail. Laser-quality black text. All from our exclusive Micro Piezo™ Technology – for the smallest, cleanest, most consistent dot ever created. You'll get outputs that look just like originals – at overall print speeds 25% faster than any competitor's. Starting at just $299. Call 1-800-GO-EPSON and ask for Operator 3010 or visit us at www.epson.com. You'll see exactly why these printers are, well... real gems.

INTRODUCING THE WORLD'S ONLY 1440 DPI COLOR INK JET PRINTERS.

EPSON Stylus® Color 600 just $299. Photo Quality for home and office.

EPSON Stylus Color 800 just $449. High-performance business printer.

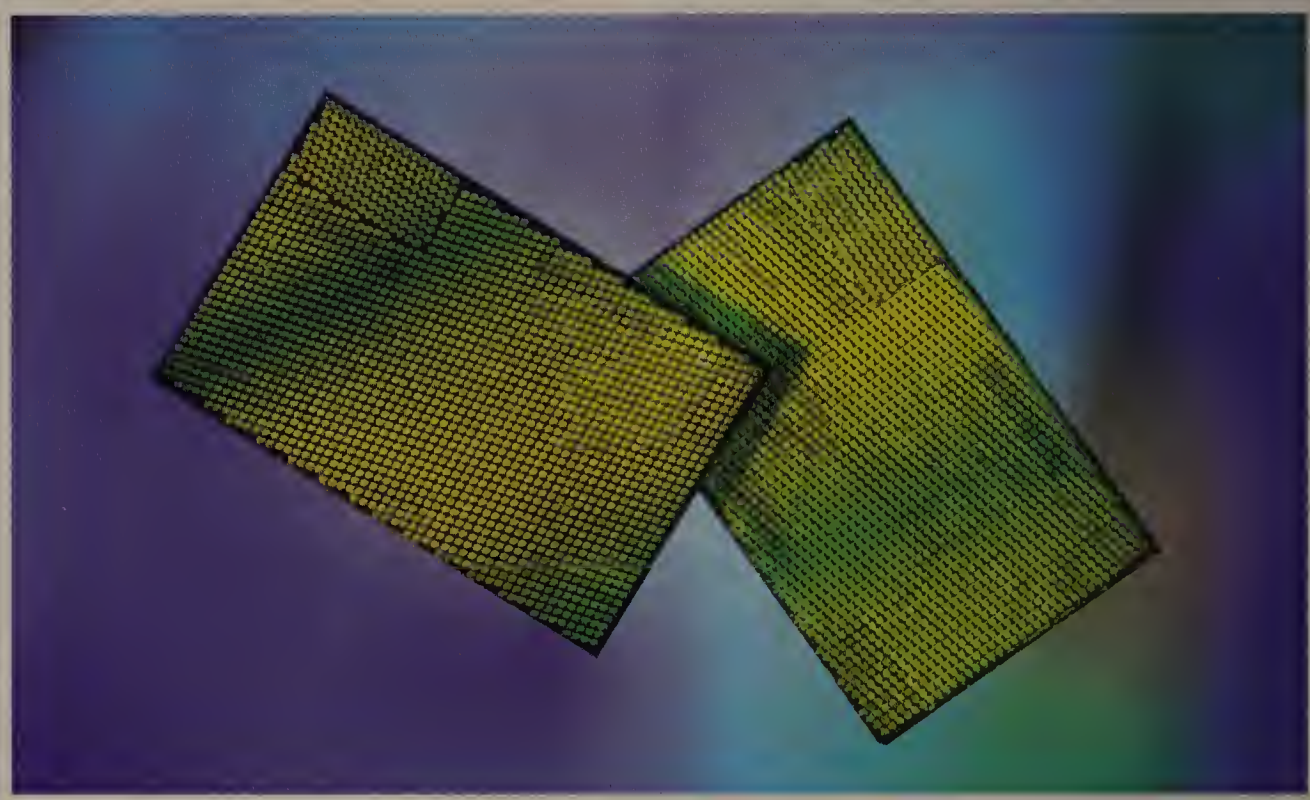
News

systems

X704 Not Even Close to Eclipsing Pentium

FIRST TESTS DON'T SHOW THE 450MHZ CPU'S PROMISE

by Galen Gruman



KEVIN CANDLAND

In our tests, Exponential's X704 CPU ran up against the Mac's—and its own—limitations.

Even with the knowledge that the Macintosh is now comfortably outpacing Pentium-based PCs (see "The Mac Wins the Race," in this issue), many Mac owners have been anticipating a development that would put the Mac so far ahead of the PC that Intel and Microsoft might never bridge the gulf. The novel X704 CPU from Exponential Technology (408/441-6050, *http://www.exp.com*) is what has given the Mac community that anticipation. The X704 is designed to run at 533MHz—a level far beyond what any CPU can do today.

However, the first Macworld Lab tests of the PowerPC-compatible X704 don't show that promise. In fact, the modified Apple Power Mac 9600 that we tested running a 450MHz X704 was only on par with a Umax SuperMac S900/225—a Mac that uses the 225MHz PowerPC 604e. While 225MHz PowerPC 604e performance is nothing to sneeze at, it does not meet the expectations of a 450MHz rating. (Promised to run at 533MHz, the X704 is not yet fine-tuned for that speed. Also, to run at 533MHz requires a bus speed of 66MHz, which no shipping Mac yet offers.)

And when pitted against a Motorola Viper system using the Common Hardware Reference Platform (CHRP) design and a 266MHz PowerPC G3 CPU, the X704 prototype looks downright pedestrian.

Typically, we saw speed gains of only 20 to 30 percent above the S900/225's for CPU-intensive work in Macromedia FreeHand 7, Adobe Photoshop 4, Fractal Design Painter 4, and QuarkXPress 3.32.

Equally typical was slower-than-S900/225 performance in tasks that used the disk and video subsystems—the X704-based 9600 ran 20 to 30 percent slower than the S900/225.

And in many tests (such as database sorts, spreadsheet calculations, and some graphics-manipulation tasks), the X704-based 9600 was merely on par with the S900/225.

Work in Progress Though not promising, our test results should still be taken with a grain of salt: the X704 is not a finished CPU, and the modified Power Mac 9600 it was running in is by no means a stable, optimized system.

First, the X704 was greatly hobbled by the modified 9600's 45MHz system bus speed. The

X704 ran at 450MHz, or ten times the bus speed. The 225MHz S900's 604e ran at five times its 45MHz bus speed, while the 266MHz Viper's G3 ran at four times its 66MHz bus—so both spent considerably less time waiting for the bus.

On a 66MHz CHRP-based Mac, I would expect the optimized X704 to perform noticeably better. On such a system, it could run at its 533MHz promised speed—eight times the 66MHz bus speed—a much smaller speed gap between the CPU and the bus than between the 450MHz X704 and the Power Mac 9600 prototype's 45MHz bus. Spending much less time in a waiting state, the CPU could operate more efficiently, letting the X704 deliver more of its raw speed to the Mac.

Second, the modified 9600 was clearly unstable—it crashed often (unlike the S900 and prototype Viper systems). And it had compatibility problems that may have affected performance; for example, the X704-based 9600 could not run with virtual memory enabled, and it could not run Microsoft Word 6.01.

The 9600 had several modifications that Apple would not let Exponential

continues on page 34

systems

New Apple Subnotebook Fills Gap

WILL TINY KEYBOARD COME UP SHORT?

by Cary Lu

Apple's diminutive PowerBook 2400c, designed with and built by IBM Japan, was originally intended only for the Japanese market. But the 4.4-pound subnotebook is now set to debut in the United States in August. The sticking point was the tiny keyboard, 87 percent of standard size (similar to the Newton external keyboard), compared with the discontinued Duos' 95 percent. On the positive side, the new keyboard layout does have inverted-T cursor keys— previously lacking in PowerBooks—and the keys have a solid feel.

For $3499, you get an external floppy drive (not compatible to earlier external PowerBook floppy drives), 16MB of RAM, and a 1.3GB internal IDE hard drive. The only internal upgrade possible is an industry-standard SO-DIMM (small outline DIMM) slot that can hold up to 32MB, bringing the total RAM to 48MB.

Keeping Up with the 3400

The 2400c motherboard is based on the PowerBook 3400 design, made smaller to fit into a case ⅖ inch thicker than a Duo's. The PowerPC 603e processor runs at 180MHz with a 256K L2 cache. Not surprisingly, the 2400c turns in test scores that nearly match the 3400c/180's (see "Subnotebook Keeps Pace with 3400c"). The 2400c includes the same video subsystem as the 3400, complete with an external VGA video connector; aside from mirror mode it supports only a single logical monitor. On the 10.4-inch diagonal active-matrix color LCD screen, you get an 800-by-600-pixel 105-dpi image; it's a little squeezed, but usable.

ARNOLD TIOSEJO

The PowerBook 2400c is speedy, but its tiny keyboard may not appeal to U.S. users.

Full Complement of Ports

Though it lacks the 3400's internal PCI-style expansion slot, the 2400c does support CardBus PC Cards for PCI functionality with future PC Cards. Apple says it will offer PCI drivers when CardBus cards arrive. The PC Card slots also support Zoomed video for displaying television-style images. The 2400c has the full set of PowerBook ports, including ADB, SCSI (HDI-30 connector), a GeoPort-enabled serial port, infrared, and a floppy drive. The infrared supports 1-Mbps IrDA protocols—provided drivers are available—and the floppy drive connector, new to PowerBooks, is the same one used in IBM's subnotebooks. With a full set of ports and CardBus, the 2400c requires no docks. Ethernet and modem connections require an appropriate PC Card.

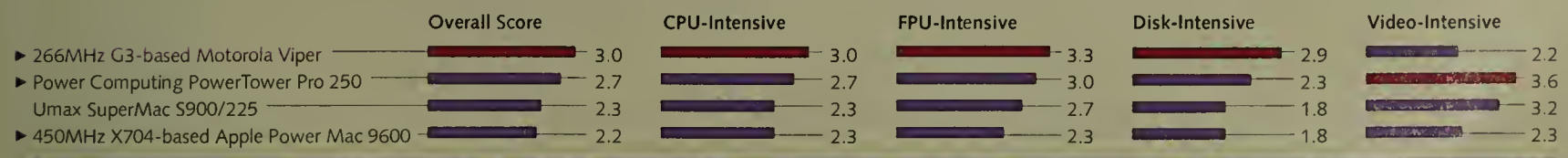
continues

Macworld LAB TEST

X704 Prototype Delivers No Wallop

At speeds expected to hit 533MHz, the PowerPC-compatible X704 CPU from Exponential Technology should make the Mac soar to heights unmatched by any PC. But the first tests of an X704-based Power Mac 9600 prototype, running at 450MHz, don't show that performance. Overall, the X704-based prototype runs slightly slower than a 225MHz PowerPC 604e-based Mac—essentially at the speed of a normal, unmodified Power Mac 9600/200—and it is much slower than a 266MHz PowerPC G3-based prototype. Note that these test results are not comparable to *Macworld's* standard systems tests; the tests here were optimized for high-performance Macs.

Best result in test. Longer bars are better. Results are times as fast as a Power Mac 7500/100 (7500/100 = 1.0). Products are listed from fastest overall to slowest overall. ▶ indicates a prototype system (not yet shipping).



Behind Our Tests

Macworld Lab tested several tasks in each of 14 programs to determine overall system performance as well as performance for each of the Mac's key subsystems. All systems had 32MB of RAM, used Mac OS 7.6.1, and ran at 832-by-624-pixel resolution in 16-bit color mode.—**Macworld Lab testing supervised by Mark Hurlow**

A lithium battery provides two to four hours of use, according to Apple, and the 2400c uses the same AC power adapter (interchangeable with Duo power supplies) as the 1400 and 3400 models.

A speed upgrade is possible, but Apple offers no word yet on a 200MHz or 240MHz version. The CPU is soldered on the motherboard, so an upgrade means a motherboard change.

online

Vector File Formats Duel on the Web

WHICH ANIMATION SOFTWARE WILL WIN?

by Stephen Beale

A headline moves across the home page and explodes into a jumble of letters. A balloon inflates and bursts, revealing catchy ad copy inside. Now, thanks to emerging Web-based vector-animation technologies, you can create effects like these using less file space than the typical GIF or JPEG image takes up.

Sounds great, but there's a catch: three incompatible vector-animation formats are being promoted by three companies—Macromedia (415/252-2000, *http://www.macromedia.com*), PaceWorks (415/261-6180, *http://www.paceworks.com*), and Lari Software (919/968-0701, *http://www.larisoftware.com*)—and now Apple Computer has entered the fray by adding vector capabilities in QuickTime 3.0.

The Vector Advantage In a vector animation, each graphic element is stored not as an image, but as a mathematical expression that describes its size, shape, position, and other characteristics. With many animations, these expressions take up much less file space than the equivalent bitmapped animated GIF. Vector animations are especially well suited for logo treatments and other effects that can be easily rendered as lines and curves.

Unfortunately, each animation technology requires its own plug-in or other software for playback.

One solution to the morass of competing formats is QuickTime 3.0, which supports vector animation. You can view QuickTime-based vector animations on any QuickTime-enabled browser—including Netscape Navigator and Microsoft Internet Explorer. To view animations, you need QuickTime 3.0 but not a new version of the plug-in.

Despite QuickTime's broad acceptance in the marketplace, only Lari Software has wholeheartedly embraced the QuickTime vector-animation format, and even Lari is hedging its bets by supporting its own

Electrifier technology in addition to QuickTime.

Lari Electrifies Lari introduced a QuickDraw GX–based vector-animation format called Electrifier in August 1996. Although Electrifier did not require GX, it was Mac-only technology, and the playback software needed to view the animations would not run under Windows.

But now Lari has adopted the new QuickTime format. Its $99 LightningDraw Web lets you create QuickTime vector animations that can be viewed with any QuickTime-enabled browser on a Mac or PC.

Electrifier Studio, a $99 package launched at Seybold New York, lets you create Electrifier animations with GX features, such as automatic ligature substitution, that Lari says are not available in the QuickTime format. To view these animations, you'll need a QuickTime extension that Lari is currently developing.

Keeping Pace PaceWorks offers Vectorium, a format-independent animation technology, as part of ObjectDancer, a $445 program that produces both vector and bitmapped animations. Vectorium animations can be viewed with a free extension to QuickTime 2.5.

PaceWorks will probably support the new QuickTime vector format, but expect to see a Java version of Vectorium that will let Java-enabled browsers view the animations.

Macromedia Flashes Last year Macromedia acquired FutureWave's FutureSplash, which it repackaged as the $199 Flash. Animations are viewable with a free Shockwave Flash Player.

Macromedia anticipates widespread adoption of the Shockwave Flash plug-in and is encouraging developers to include it with their products.

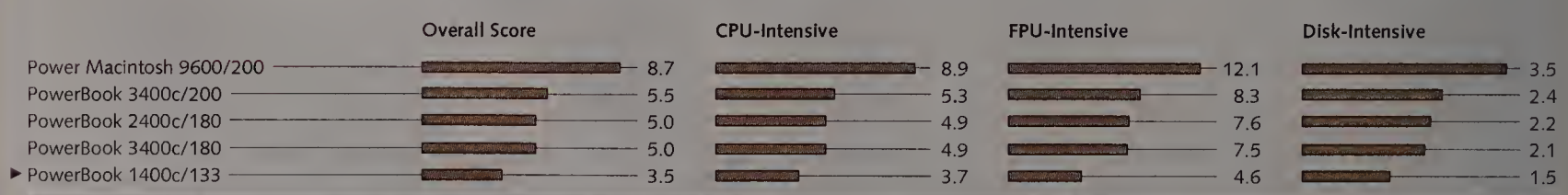
In the standards race, Macromedia clearly has the lead. But the emergence of QuickTime and Java still gives PaceWorks and Lari Software a chance to establish their formats as viable alternatives.

Macworld LAB TEST

Subnotebook Keeps Pace with 3400c

The PowerBook 2400c/180, with a PowerPC 603e/180, keeps pace with its larger sibling—the PowerBook 3400c/180. But its speedy performance doesn't make up for the lack of an internal floppy drive, a CD-ROM drive, and built-in Ethernet.

Longer bars are better. Results are times as fast as a Centris 650 (Centris 650 = 1.0). Products are listed from fastest overall to slowest overall. ▶ indicates a prototype system (not yet shipping).



Behind Our Tests For details on *Macworld's* system benchmarks, see *Mac Superguide*, January 1997.—**Macworld Lab testing supervised by Mark Hurlow**

JAMIE BENNETT

networking

AppleShare Finds a New Home

LATEST APPLE SERVERS TARGET WORKGROUPS

by Elizabeth Dougherty

Apple Computer's (408/996-1010, *http://www.apple.com*) two new workgroup servers build on the company's latest system designs and offer a slew of bundled software, including the long-awaited AppleShare/IP 5.0. The Workgroup Server 7350/180 and the Workgroup Server 9650/233 target workgroups in Apple's traditional markets: publishing, education, small businesses, and corporate departments.

Apple will offer each server in three software versions. Due in May is the Applications Server Solution ($2899 for the 7350, $6199 for the 9650). The Apple Internet Server Solution ($3399 and $5799) and the AppleShare Server Solution ($3599 and $6899) are slated to be available late in May, when AppleShare/IP 5.0 ships.

AppleShare/IP, Apple's file- and print-server software, adds TCP/IP, FTP, POP3/SMTP, and HTTP Web server capabilities. Claris (408/727-8227, *http://www.claris.com*) will sell an unlimited-user version for $1999, a 50-user license for $1349, and a 5-user license for $799. Users will pay $499 for an upgrade from version 4.X.

Improved Hardware The 7350/180 uses the Power Mac 7300 motherboard with a 180MHz 604e CPU. It ships with 48MB of RAM, expandable to 256MB; a 4GB hard drive; a 12× CD-ROM drive; and one free expansion bay. It has three standard PCI slots, an internal SCSI-2 Fast (10-MBps) bus, an external SCSI-1 (5-MBps) bus, 256K cache, and a 10BaseT Ethernet port.

The 9650/233, with the Power Mac 9600 motherboard and a 233MHz 604e CPU, ships with 64MB of RAM (expandable to 768MB). It comes with ultrawide hard drives and an Ultra SCSI (40-MBps) PCI card. The AppleShare and Applications versions come with two 4GB ultrawide hard drives or with one 4GB ultrawide hard drive and a DDS-2 DAT drive for the same price. The Internet server has one 4GB ultrawide hard drive.

The 9650 has an Integrated Micro Solutions TwinTurbo 128 PCI video card and four open PCI slots. It ships with a 12× CD-ROM drive and, depending on the configuration, three or four expansion bays. The 9650 has nonupgradable 512K cache, an internal SCSI-2 Fast bus, an external SCSI-1 bus, and AAUI and 10BaseT ports.

KEVIN CANDLAND

New workgroup servers, the 9650/233 (left) and the 7350/180, target Apple's core markets.

Lots of Software Apple preinstalls Mac OS 7.6.1, Open Transport 1.1.2, Apple RAID 1.5, and, in some configurations, AppleShare/IP 5.0 on the servers. The other software comes on CDs with licenses for ten users.

For a complete list of the software programs included with each configuration, see *http://www.macworld.com/daily/daily.1227.html.*

systems

OS 7.6.1 Adds New Bugs

UPDATE FOR NEW POWER MACS CAUSES MORE PROBLEMS

by Allyson Bates and Tova Fliegel

The search for a universal Mac OS release—a single system release that runs on all Macintosh models—is still not over. Although Mac OS 7.6 shipped in late January, the new Power Macintoshes—the 4400, 7300, 8600, and 9600 systems announced in mid-February, as well as the 5500's and 6500's announced in March—do not support it. In April, Apple introduced Mac OS 7.6.1 in an attempt to solve two problems: to improve stability for existing 7.6 users and to enable recently introduced computers to run Mac OS 7.6.

But while it reduces the number of system crashes, 7.6.1 introduces new problems. And although the 7.6.1 update was widely available for 7.6 users, at press time purchasers of the new Power Macs were still waiting for Apple to distribute a full system release of 7.6.1. (Mid-May is the company's outside estimate for availability of the full release.) Among the problems and gotchas with 7.6.1:

- L2 cache is disabled on Alchemy-based systems running 7.6.1. These include the Apple Power Macintosh 5400's, Performa 6360's and 6400's, Power Computing PowerBase machines, and Umax Computer SuperMac C600's and C500's. A patch that re-enables the L2 cache is available from *http://www.macworld.com/software/IndexSoftware.AppleSoftware.html* or *http://support.info.apple.com.*
- Older versions of Connectix's Speed Doubler are purposely disabled with 7.6.1. Users can avoid disabling Speed Doubler by downloading versions 1.3.2 or 2.01 or higher from *http://www.connectix.com/connect/upda.spee.html.*
- PowerBook 3400's run a different version of the 7.6.1 installer. The download areas ask which machine you're using, so be sure to specify. PowerBook 3400 users who are running Open Transport 1.1.2 also must install Mac OS 7.6.1 immediately after they install OT 1.1.2.

Several other bugs exist. The QuickTime MPEG card does not work with either Mac OS 7.6.1 or 7.6. Although there's currently no fix, Apple notes that 7.6.1 now allows MPEG software decompression, whereas 7.6 does not. Those using 680X0 machines will experience problems printing with the LaserWriter 8.3.4 driver; the workaround is to install LaserWriter 8.4. Macintosh network managers are also reporting an increased sensitivity to the Ping o' Death (see "A Ping to Die For," *News*, February 1997), a problem Apple is still researching. For a complete listing of known problems, see *http://devworld.apple.com/dev/technotes/tn/tn1096.html.*

Apple says there will be no more 7.6 updates and Mac OS 8 is on track for July release.

X704 NOT EVEN CLOSE TO ECLIPSING PENTIUM

continued from page 31

reveal, and there were several extensions in the System Folder to deal with them and with the X704 CPU itself. These may have contributed to the unexpectedly slow performance. Mac OS 7.6.1 (which the X704 prototype requires) has had difficulties with some cache architectures, although it's unclear if that affected the speed. *Macworld* has learned that the modified 9600 probably included the very fast cache that Apple is designing for its next set of 9600-based Macs. Code-named Kansas, this fast-bus Power Mac design will likely debut this fall. Also, the video circuitry was the standard Power Mac 9600's, not a fast video card's as in the other systems we tested.

Unoptimized Design But not all the slowdown can be blamed on hardware flaws; some of it was definitely due to the X704's design.

For example, the X704's speed plummets when it runs 680X0 code—which Exponential admits. Even with programs labeled PowerPC-native, expect to have some chunks still using 680X0 code. And many plug-ins and filters are written in 680X0 code, which will slow down an all-PowerPC program when it runs that plug-in or filter. For example, our tests show that although the X704 performed speedily in Photoshop 4.0, it choked when running an Adobe Gallery Effects Photoshop filter that happened to be in 680X0 code.

And the X704 has not been optimized for floating-point performance. While most everyday programs use integer math, many high-end programs use floating-point calculations—including some Photoshop operations and many rendering operations in programs such as Infini-D.

Too Soon to Tell Despite these early results, don't count the X704 out. Exponential has already cleared a major stumbling block by producing the CPU at all. Because it combines two chip technologies—one called CMOS and one called bipolar—many industry watchers thought it would never work at all.

Then its huge heat dissipation—60 watts, or the same as a low-level lightbulb, which is four times that of a Pentium—threatened to make sufficiently cooled case designs too difficult or expensive to produce. But the modified Power Mac 9600 didn't seem to overheat through eight hours of continuous usage, and Exponential has shown *Macworld* fairly straightforward cooling approaches that should work in most of today's tower cases.

Work continues at Exponential and at several Mac makers to bring the X704 into Mac systems. When the CHRP architecture arrives (likely this summer, if the CHRP-compatible Mac OS isn't delayed again), the X704 should have a better-equipped platform on which to run. Although that won't address its poor performance with 680X0 code, it should let the X704 deliver more on its promise for PowerPC-native programs.

SUZANNE ROADY

PaperPort in Living Color

The PaperPort Vx from Visioneer (510/608-0300, *http://www.visioneer.com*) has long been a popular peripheral for scanning text and the occasional gray-scale image into a computer system. Now, with the new PaperPort Strobe, the company is adding color to its vision. The $329 sheetfed scanner captures images at 300 dpi in 24-bit color, using Visioneer's MicroChrome technology to optimize picture quality. The company claims that the PaperPort can exceed the image quality of flatbed scanners thanks to its simpler optics. It's bundled with Xerox Textbridge software for text recognition, PictureWorks PhotoEnhancer for image retouching, and Connectix QuickCards for creating custom greeting cards.—STEPHEN BEALE

storage

PC Card Readers on the Horizon

LOW-COST UNITS TARGET DIGITAL CAMERA USERS

by Stephen Beale

Apple's PowerBooks have long featured PC Card interfaces that let them use modems, network connectors, and other PC Card peripherals. Until recently, PC Card readers for desktop Macs have been rare commodities. But with the emergence of low-cost digital cameras that store images on CompactFlash PC Cards, vendors of PC Card readers are targeting the Mac market, so you're likely to see under-$200 PC Card readers within the next several months.

Portable Origins The PC Card standard was originally developed to allow vendors to create compact peripheral products—modems, storage devices, and more—for portable computers. But thanks to the PC Card's form factor—no bigger than a small pocket calculator—the technology also provides an attractive solution for storing images in digital cameras.

A PC Card reader transforms the PC Card from a pure storage to a fast data-transfer device. Sending images via a serial cable can be painfully slow. With a PC Card reader, you can pop the card out of the camera, insert it in the reader's slot, and copy the images—as if they were stored on a disk—in seconds.

Most digital cameras with PC Card interfaces use a stor-

continues

THE POWERLOOK II SCANNER

THE MOST ADVANCED TECHNOLOGY IS USED TO OUTPERFORM THE AGFA ARCUS II:

- Scans three times faster; full-color page in 41 seconds
- Higher 3.2 dynamic range for greater details
- Cold cathode lamp lasts ten times longer than a fluorescent lamp
- Bundled with binuscan® PhotoPerfect software renowned for its high quality auto color correction, image enhancement, and separation tables

Get $200 off when you trade in your old scanner!*

*Act now. Offer expires June 30, 1997. Call 1-800-249-1882 for details.

THE POWERLOOK II SCANNER MAKES THE COMPETITION LOOK LIKE ANCIENT TECHNOLOGY.

"As for the output for the PowerLook II, 'gorgeous' is an understatement."

The PowerLook II from UMAX gives you the latest in scanner technology. With faster speeds and better features, it makes our competitors' scanners look like ancient relics. The PowerLook II produces rich images with a full range of colors and the sharpest details in highlights and shadows. PowerLook II. It brings scanning technology into the modern world.

For more information, call 1-800-546-8557 or visit us at www.umax.com.

UMAX®

© 1997 UMAX Technologies, Inc. All rights reserved. UMAX is a registered trademark of UMAX Technologies, Inc. All other brands and product names are trademarks or registered trademarks of their respective companies.

Circle 45 on reader service card

Sneak PEEK

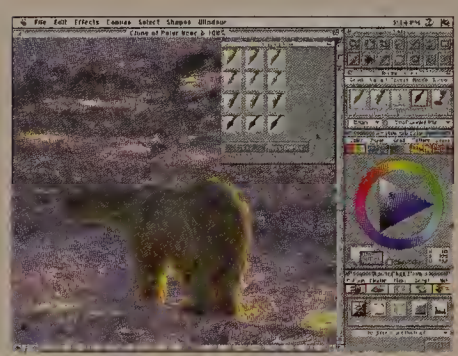
Painter 5 Offers Eye-catching Effects

BY CARLOS DOMINGO MARTINEZ

Sometimes product upgrades can be disappointing, adding needless complexity or altering a well-defined interface. Happily, that's not the case with Fractal Design Painter 5, due to ship by early June. The prebeta prototype version I looked at adds many useful features that should prove popular with artists, illustrators, and Web-site designers. Still, Painter's essential character remains unchanged, so while veteran users will feel right at home, novices should expect a learning curve.

Brushes, Floaters, and Plug-Ins Most significant is Painter 5's redesigned architecture, permitting additional tools and plug-ins that exploit Painter's strengths. A developer's kit will be provided to encourage other vendors to develop plug-ins. Among the slick new add-ins is a set of Photo brushes that provide effects such as darkroom manipulation (dodge and burn), color management (adding hue, saturation, and value), and retouching (scratch and dust removal). Other plug-in brushes let you twist and pull colors across an image and produce glows by simply painting them. Although still unfinished, these brushes worked fairly well.

Painter 5 also incorporates plug-in Dynamic Floaters (layers) for such effects as glass distortions, edge tearing and edge burning on floating selections, and brightness and contrast adjustments on underlying layers. Another Dynamic Floater lets you define bevels for floating objects; using its extensive controls, you can manipulate eight beveling attributes to create unique image buttons for Web pages and interactive multimedia applications.



Painter 5's Liquid Metal Dynamic Floater lets you apply metallic paint that behaves like liquid mercury and reflects its surroundings.

Tear-Off Tools Working palettes (for art materials, objects, tools, and the like) have been only slightly revised, but Painter 5 restores the ability—missing since version 2—to tear off tools for easy access. In fact, it improves on that feature by adding user-definable custom palettes, so you can organize tools and menu commands to suit specific projects. In response to user requests, Painter's selection and masking tools have been simplified and revised to work similarly to those of other programs, particularly Adobe Photoshop. Other important additions to the product are the inclusion of the Kodak Color Management system and support for CYMK and Pantone's six-color Hi-Fi Hexachrome output.

Of course, given its alpha status, the Painter 5 I previewed didn't always behave perfectly. Not all the features were fully implemented or worked properly, but overall, I'd say Painter 5 seems to be headed in the right direction.

age technology called CompactFlash developed by SanDisk (408/542-0500, *http://www.sandisk.com*). SanDisk and other vendors offer CompactFlash cards with capacities between 2MB and 100MB; prices begin at about $100. However, some recently introduced cameras, including Apple's QuickTake 200, use an alternative technology called SSFDC (for solid-state floppy disk card). Much less costly than PC Cards, they can be used with a PC Card reader through an adapter.

GIBSON

Adtron's $500 dual-slot PC Card reader is aimed at professional photographers.

Migrating Down The first cameras that used PC Card storage were professional models—with five-figure price tags to match—from Kodak and Nikon, and as a result, the first PC Card readers available for the Mac were relatively costly. Adtron (602/926-9324, *http://www.adtron.com*) offers a $500 dual-slot PC Card reader for users of these cameras. Intermart (408/379-0770, *http://www.intermartsys.com*) has a $300 internal dual-slot reader, a $425 external dual-slot reader, and a $399 external single-slot reader.

Now that Kodak, Ricoh, and other companies have introduced digital cameras with PC Card storage in the under-$1000 range, vendors of PC Card readers are developing inexpensive single-slot versions of their products. This summer, for example, Adtron will offer a single-slot reader in the $150-to-$200 range. Intermart says it's also considering such a product.

You can expect prices for CompactFlash storage cards to come down, especially given competition from SSFDC media. PC Cards also change the way you use your digital camera software—instead of opening and saving the images with the software that comes with your camera, you can transfer them in the same way you copy images from any other storage device. As a result, you can expect developers of digital camera software to add features that let you batch-convert images from their proprietary formats into standard TIFF or JPEG files.

networking

Macs Can Thrive in an NT World

YOUR PROGRAMS CAN RUN ON AN NT SERVER

by Cathy Abes

As more companies standardize on Windows NT–based networks, Macintosh users are being pressured to switch platforms. If you're a typical Mac loyalist in a Windows world, chances are your IS manager has insisted that you must be on Windows to connect to the company's NT server, but you don't want to give up your Mac. Well, guess what? You don't have to.

NT at Your Service Many people don't realize that Macs can seamlessly coexist with

continues

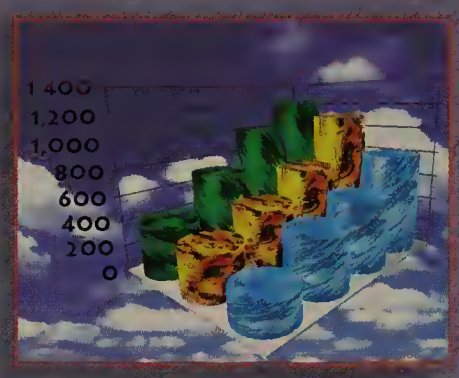
Are you losing sleep dreaming of a sexy spreadsheet and

mind-blowing charts !?!

Imagine a spreadsheet with more features than ClarisWorks™, but without the bloated feeling of Microsoft Excel™!

Introducing Adrenaline Numbers & Charts 1.0™

Have you ever imagined being able to transform your existing Excel data into amazing, shaded, texture-mapped, true 3D charts using any 3D object you like ?

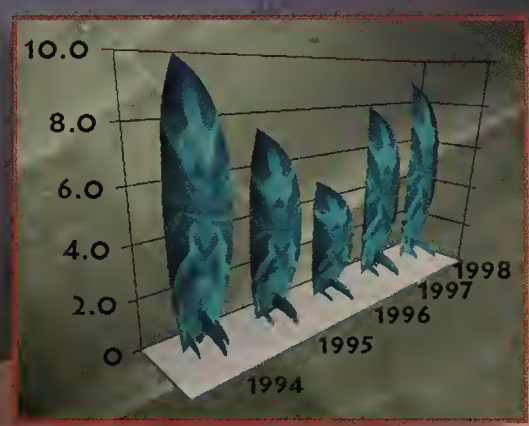


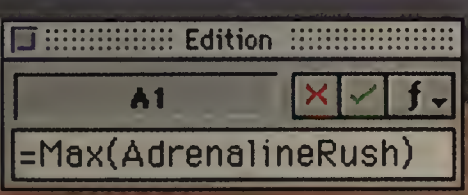
SURFBOARD SALES

Model	1995	1996	1997	1998	1999
Caffeine Overkill	3.2	8.3	17.1	24.3	36.9
WaveCrusher	5.0	12.7	14.3	22.1	29.7
Tsunami 550 GTi	7.4	14.2	16.8	24.9	34.0
OutOfControl 700/MB	11.1	34.5	61.2	76.7	89.1
Trueman Big Kahuna	2.2	4.1	31.6	50.5	66.3
Northern Impact II	12.0	22.5	27.8	34.9	42.1
HyperActive XV400	4.2	14.0	36.7	44.1	46.2
HyperActive XV7000	5.9	18.7	45.9	51.2	57.8
Terminator One	0.2	7.8	58.2	70.3	85.3
TOTAL:	51.0	129.0	251.4	328.7	402.1

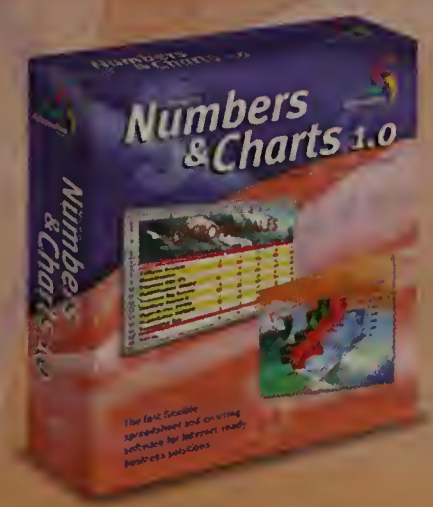
Imagine if you could save those charts as pictures, 3D objects or QuickTime™ movies ? You could use those charts in a presentation program, a video program or put them out on the Internet !

With its support for advanced Apple technologies like QuickTime, QuickDraw 3D™, AppleScript™ and more, Adrenaline Numbers & Charts takes the MacOS™ to the max !





With Adrenaline Numbers & Charts 1.0, you might not get more sleep, but you'll have a lot more fun.



Adrenaline Numbers & Charts is available right now at Cyberian Outpost, the Mac-friendly cool place for computer stuff. You may order via their web site at http://www.cybout.com/ or at 1-800-856-9800. Adrenaline Numbers & Charts is also available from MacWarehouse in the USA at 1-800-397-8508 or in Canada at 1-800-268-7805. An electronic version of Numbers & Charts is available from C/Net at http://BuyDirect.com

CYBERIAN Outpost
1-800-856-9800

©1997 Adrenaline Software, Incorporated, All Rights Reserved. Adrenaline Numbers, Adrenaline Charts, ObjectTransporter, TrueDimensioning and the Adrenaline logo are trademarks of Adrenaline Software, Inc. All other trademarks are the property of their respective owners.

Circle 23 on reader service card

Ready for MacOS 8

As the first spreadsheet and charting package to be released in over two years, Adrenaline Numbers & Charts is optimized for the technologies of today's MacOS system software as well as tomorrow's MacOS 8.

Adrenaline Numbers & Charts 1.0

Features

- PowerPC™ native calculation kernel
- 149 essential spreadsheet functions
- TrueDimensioning™ formatting (pixels, inches, cm, points, picas) for spreadsheets and charts
- Advanced scripting capabilities
- Export spreadsheets as HTML
- Microsoft Excel 5.0 data compatible
- 23 2D/3D chart types to select from
- Simple interface for direct manipulation of objects
- Texture mapping of images and movies
- Import 3D objects (3DMF files)
- Full QuickDraw 3D support
- Innovative ObjectTransporter™ technology for creating custom 3D charts
- Complete OpenDoc support

System requirements

- Macintosh with PowerPC processor
- System 7.5.3 or later
- 16 MB of physical RAM
- 5 MB of hard disk space

Adrenaline Software, Inc.
1400, boulevard du Parc technologique
suite 210
Québec (Québec)
G1P 4R7 CANADA
info@adrenaline.ca
www.adrenaline.ca

Systems WATCH

BY TOVA FLIEGEL

PowerBook Memory at Risk

A slight misalignment in the enclosure of some PowerBook 3400's can cause add-in memory cards to pop loose so that the system fails to recognize additional memory. Apple's (408/996-1010, *http://www.apple.com*) fix is a foam strip that adheres to either the RAM card or the keyboard and wedges the card into the motherboard connector. Although the strip is already shipping with the latest 3400's, and memory-card maker Newer Technology's (316/943-0222; *http://www.newertech.com*) 3400 add-ins, at press time it was not yet available from Apple tech support (800/767-2775 [800/SOS-APPL]).

Greater Cross-Platform Compatibility

Macintosh users who want to run Windows applications now have more options: new hardware from Apple and PC-emulation software from Connectix (415/571-5100, *http://www.connectix.com*).

Apple is shipping a $1000 full-slot PC compatibility card that adds a 166MHz Intel Pentium CPU to the Power Mac 7300/180. More economical are the bundled systems, due in May. The Power Mac 7300/180 PC Compatible comes with the Intel card for $3200, only $401 more than the 32MB 7300/180 alone. For $2400, you can get a Power Mac 4400/200 with a Cyrix P166 CPU card and 16MB of PC RAM, 32MB of Mac system RAM, a 2GB hard drive, and a 12× CD-ROM drive. You can't get the Cyrix card separately. (The 4400/200 without the card, 16MB of RAM, a 1.2GB hard drive, and an 8× CD-ROM drive costs $1749.)

Connectix has announced Virtual PC, an emulator that lets Power Macintosh users run PC productivity applications, games, multimedia titles, and various PC operating systems. Virtual PC is set to ship in June; pricing has not been set.

New Fast Systems

Following Apple's lead, Motorola Computer Group (602/438-3000, *http://www.mot.com/starmax*) plans to ship a 300MHz 603e system in May. The $2899 minitower includes Mac OS 7.6, 512K of cache, a 16× CD-ROM, five PCI slots, a 4.3GB hard drive, 32MB of RAM, and 4MB of VRAM, plus 10BaseT Ethernet on board and an Iomega Zip drive. With an 8MB IMS TwinTurbo graphics card, the 5000/300 costs $3399.

Although both Umax Computer (510/226-6886, *http://www.supermac.com*) and Power Computing (512/388-6868, *http://www.powercc.com*) had announced 250MHz 604e systems, neither the S900/250 nor the PowerTower Pro 250 was shipping at press time, because the CPUs from chip maker IBM Microelectronics were not available in quantity. IBM plans to have the chips available by mid-May, but you should verify availability before ordering.

PCs on Windows NT networks while also taking advantage of many NT services.

A module built into NT called Services for Macintosh (SFM) provides a client-server environment that makes it easy to create Mac volumes on—and access them from—an NT server. SFM doesn't turn on automatically, though; it must be activated via the Mac's Network control panel. And Macs can access only drives or volumes formatted via NTSF, a standard NT drive format.

SFM provides AppleTalk support, including the AppleTalk Internet Router; AppleShare support (allowing an NT volume to appear on the Mac clients' desktops); and such NT services as file sharing and print spooling.

Sharing Files Once a Mac volume has been set up on the NT server, you can store all your Mac applications there, accessing them just as you would from an AppleShare server. NT-server–based applications such as Claris FileMaker Pro Server, Luminous Open and Color Central, ACI US's 4D Server, and SoftArc's FirstClass Server all have client components that run on the Mac, allowing Macintosh and Windows users to share the same files. You can edit Microsoft Excel spreadsheets, Word documents, and other cross-platform files on your Mac, then save them to the NT server, where Windows users on the network can also access them.

There are some limitations, though. Because NT provides only an AppleShare server and not a client, Macs can't directly access individual Windows machines on the network; nor can the server or the Windows machines access the Macs. But other products address those problems. Thursby Software's Dave gives Macs access to shared Windows directories (similar to Mac volumes) via TCP/IP. With Dave, Macs can directly access and share files and printers with any Windows NT, Windows 95, or Windows for Workgroups computer on the network. On the Windows side, Miramar's MacLAN Connect provides an AppleShare client that gives Windows users direct access to shared Mac volumes, and Macintosh users direct access to shared Windows volumes.

You can use an NT server to run an AppleTalk network

simultaneously with Ethernet, Token Ring, FDDI, and any other NT-supported network media. And because it can function as an AppleTalk router, an NT server reduces network administration costs and eliminates the need to buy additional routers—a big plus for budget-minded companies and schools. There's also a PostScript Level 1 RIP that allows Macs to use printers that don't have Mac drivers.

A Mac can even become an NT administrator. Microsoft's free Web Administration Tool (downloadable from *http://www.microsoft.com/ntserver/webadmin/webadmindl.htm*) lets a Mac client administer an NT server via Internet Explorer or Netscape Navigator.

Surprisingly, much confusion remains among users, IS managers, and even some software developers about how—or even whether—Macs can fit into a Windows NT world. But with NT's Mac client services, there's no reason you can't keep that Mac on your desk.

JAMIE BENNETT

Introducing the MessagePad 2000, the only handheld computer you can actually use.

Of all the handheld computers, only the MessagePad 2000 offers sharp, crisp backlighting and a 16-level, high-resolution gray-scale screen that rotates on command. Which means you can always see your work in the best orientation—horizontal or vertical, even upside down. And in the best light. Bright. Or dim.

The MessagePad 2000 gives you more flexibility, thanks to its two PC slots (other handhelds have only one slot). So, for example, you can dedicate one to a wired or wireless modem and use the other for additional memory.

How much can you do in three to six weeks? That's how long a set of AA batteries lasts under normal usage. Note: normal usage here means a lot. Like having backlighting on, using the modem, crunching numbers, writing e-mail, drawing, doodling, whatever.

Built-in software lets you connect directly to a variety of serial, IrDA and LocalTalk® printers—unlike most Windows® CE devices, which have to be hooked up to a PC in order to print.

There's fast. And then there's fast. The MessagePad 2000 comes with a screaming 160 MHz RISC processor, which offers up to five times the performance of the 20-40 MHz processors you get with other handheld devices.

The usable area of the MessagePad 2000 screen is up to 56% larger than what you'll find on most Windows CE products. So, instead of having to decipher small sections at a time, you can read the entire width of a fax or Web page.

A built-in microphone and speaker let you record and play back voice dictation. And the MessagePad 2000 is the only handheld computer that lets you record and take notes simultaneously.

The MessagePad 2000 works easily with desktop computers. So you can create documents on the MessagePad 2000, then transfer them to and from Microsoft® Excel or Word on any Windows or Mac® OS-based system. Or you can keep your calendar and address book current by synchronizing them with desktop programs like Microsoft Schedule+ 7.0 or Claris Organizer™ 2.0. And it's easy: with Auto Dock, the MessagePad 2000 makes these transfers automatically.

Unlike Windows CE-based devices, MessagePad 2000 is the only handheld computer that lets you exchange data with both Windows and Mac OS-based computers.

The MessagePad 2000 handheld computer offers a real detachable keyboard (not a tiny, finger-cramping version). So you can quickly and easily type e-mail, business letters, project reports. Only your superb writing style—not your aching fingers—will determine the length of your documents.

Of all the handheld computers out there, only one makes it truly easy to be productive on the road. Introducing the MessagePad® 2000. Rather than just letting you view data, the MessagePad 2000 lets you carry out sophisticated tasks with the greatest of ease. For example: you can now write a full-length proposal, insert information downloaded from the Web—even include pricing from your company's Intranet—and then fax or e-mail it to a client. Try that with an ordinary handheld computer. The MessagePad 2000 has more power, more storage, more flexibility. All contained within the most innovative design, optimized for usefulness. Of course, there's only one real way to understand how incredible the new MessagePad 2000 is: try it yourself. For the name of a dealer near you, or to get more information, call 800-909-0260. Or visit us at www.newton.apple.com/useit.

Modem and ISP required for Internet access. Competitive specifications as of February 1997. ©1997 Apple Computer, Inc. All rights reserved. Apple, the Apple logo, the lightbulb logo, LocalTalk, Mac, Macintosh, MessagePad and Newton are registered trademarks of Apple Computer, Inc. Claris Organizer is a trademark of Claris Corporation. Microsoft and Windows are registered trademarks of Microsoft Corporation. All Macintosh® computers are designed to be accessible to individuals with disability. To learn more (U.S. only), call 800-600-7808 or TTY 800-755-0601.

SPECIAL REPORT

New Products Abound at Seybold

DESPITE INTEL THREAT, MAC STILL DOMINATES

by Stephen Beale

QuarkXPress 4.0, PostScript 3, and a new threat from Intel were among the major developments at this spring's Seybold conference in New York.

The Macintosh still dominates among publishing pros, but Intel, along with such partners as Intergraph, Compaq, Microsoft, and Adobe Systems, was highly visible at the show, promoting Windows NT systems for publishing and graphics. Microsoft has licensed Linotype-Hell's LinoColor color-management technology, one area where the Mac still has a clear lead over Windows.

During a keynote session, Apple executive vice president Ellen Hancock responded by touting the latest Mac hardware and describing Rhapsody OS features of special interest to publishers, such as the ability to install and share on a server an unlimited number of fonts. She also reminded publishers that Microsoft is now a content provider through MSNBC and other ventures. "If you invest in Microsoft, they may use that money to compete with you," she said.

Quark Returns The biggest product news at Seybold was QuarkXPress 4.0, a long-awaited upgrade that adds index and table-of-contents generation; character style sheets; and new graphics capabilities, including running text along a path, building complex shapes, and dropping out white or near-white backgrounds from imported images for irregular text wraps.

NetObjects and Astrobyte announced upgrades of their Web authoring tools. NetObjects Fusion 2.0 adds frames support, a Master Borders feature similar to Master Pages in QuarkXPress and Adobe PageMaker, and the ability to import an entire Web site in addition to individual pages. Astrobyte's BeyondPress 3.0, which converts QuarkXPress documents into Web pages, now supports cascading style sheets and Bitstream's TrueDoc font technology, which allows graphic designers to use formatted text in HTML documents.

Plug-ins and Xtras Chroma Graphics (415/375-1100, *http://www.chromagraphics.com*) and Extensis (503/274-2020, *http://www.extensis.com*) both showed new Adobe Photoshop plug-ins—MagicMask and MaskPro, respectively—with enhanced masking capabilities. Extensis also announced Flight Pro, a $400 package that prepares QuarkXPress files for prepress output (PageMaker support is promised), along with new versions of Intellihance and Fetch (now called Portfolio).

Altamira Group (818/556-6099, *http://www.altamira-group.com*) showed a $129 Photoshop import-export module called Genuine Fractals that uses fractal mathematics to convert scanned images into a resolution-independent format. It lets you scan an image at 15MB to 25MB, store it in a Fractal Image File, and print it at a size and resolution that would otherwise require a 400MB to 500MB scan without compromising quality.

Vertigo 3D Software (604/684-2113, *http://www.vertigo3d.com*) introduced Vertigo 3D Words, a $100 Adobe Illustrator plug-in for creating 3-D text effects. Hot Door (562/438-0377, *http://www.hotdoor.com*) introduced CADTools, a $129 plug-in that converts Illustrator into a CAD program.

Macromedia (415/252-2000, *http://www.macromedia.com*) announced three free FreeHand Xtras: export modules for GIF89 and the Flash format, and a PDF import/export plug-in. A FreeHand update, version 7.0.2, supports drag and drop of Photoshop 4.0 files, and import and export of Photoshop 4.0 EPS files.

SUZANNE ROADY

Umax's Mirage II provides high-resolution scanning at a reasonable price.

PostScript and PDF Adobe officially launched PostScript 3, which was first announced at last fall's Seybold in San Francisco (see "PostScript Level 3 Adds Web Features," *News*, December 1996). PostScript 3 printers will include numerous Web-oriented features, including a built-in Web server that provides access to printer drivers, status information, online help, and printer controls. Printers can directly process HTML, PDF, GIF, JPEG, and text files. A Smooth Shading function speeds color printing and reduces or eliminates banding effects. Masked Images improves the printing of composite images, a common cause of PostScript errors.

Adobe also announced Adobe PostScript Extreme (formerly Supra), which uses new printing features in the Acrobat PDF format to streamline prepress workflow (see "Acrobat Climbs Higher on the Web," *News*, April 1997). Lantana Research (510/744-0282, *http://www.lantanarips.com*) unveiled Crackerjack, a $495 Acrobat plug-in that lets you control the printing of PDF files.

New Hardware Much of the new hardware introduced at Seybold was high-end equipment aimed at service bureaus. For those who balk at five-figure hardware, Umax (510/651-9488, *http://www.umax.com*) introduced the Mirage II, a $7995 dual-lens flatbed scanner that offers 700-dpi optical resolution when scanning large images (up to 11.4 by 17 inches) and 1400-dpi resolution when scanning smaller images. It has a built-in transparency adapter and is bundled with color-correction software from Binuscan.

GCC Technologies introduced the Elite 1212, a 1200-dpi, 12-pages-per-minute monochrome laser printer (617/275-5800, *http://www.gcctech.com*) with an estimated price of $1499; the printer is equipped with AMD's 50MHz 29040 microprocessor and offers a two-sided printing option. Olympus (516/844-5000, *http://www.olympus.com*) also showed two prototype units: the P150, a 4-by-5-inch dye-sublimation printer, which allows Olympus digital camera owners to print directly from their cameras via a serial cable; and a 35mm film scanner that supports Kodak's Advanced Picture System technology. QMS (334/633-4300, *http://www.qms.com*) broke into the dye-sublimation market with two new models, the ColorScript 460 and 480, priced at $7999 and $12,999 respectively.—*Additional reporting by Jeff Sacilotto.*

5 burning reasons to own

NEW

Fractal Design

Painter 5

Previous Awards from Painter 4.

© Copyright 1997 Fractal Design Corporation. All rights reserved. Fractal Design Painter and Natural-Media are registered trademarks of Fractal Design Corporation. All other trademarks are the property of their respective holders.

New Fractal Design Painter® 5 is the ultimate way to create sizzling original artwork–combining comprehensive image-editing features with Fractal Design's patented Natural-Media® technologies.

1. **Expandable plug-in brushes** let you paint with fire and neon, retouch in a snap, and transform images into hand-rendered paintings you can scale, twist, skew, and mirror—the possibilities are endless. And an extensible architecture means that as more brushes become available, you can add them to your existing software.

2. **Dynamic plug-in floaters** perform special effects like burning and tearing edges, Liquid Metal, Glass Distortion, Bevel World, Impasto and more—all available only in Painter. You get the flexibility of a Photoshop-style Adjustment Layer, with virtually unbounded imaging functions.

3. **Powerful Internet publishing tools** help you create red-hot Web sites using seamless background patterns, instant 3-D buttons, and multi-frame GIF animation.

4. **Industry-standard masking** means you don't have to burn up time learning how to do it. And Painter 5 reads and writes files in Photoshop's native format, so moving between programs is easy.

5. **Terrific tear-off tools.** Spark your creativity by working the way you want to—just tear off brushes, art materials, and menu items and place them on custom palettes that fit your needs precisely.

With scorching features like these, why waste another minute. Get the world's most creative design tool now. **Painter 5. It's hot. It's cool.**

For sales and product information, call

888-871-7387

Visit our Web Site at http://www.fractal.com

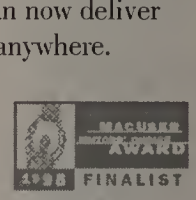
MacWAREHOUSE 1.800.255.6227

FRACTAL DESIGN CORPORATION

The ultimate presentation power tool.

You've got powerful ideas. And finally, there's a tool that can bring them to life. Introducing the Epson® PowerLite™ 5000 SVGA projector. With the perfect combination of portability, brightness and versatility, you can now deliver dazzling presentations anytime, anywhere.

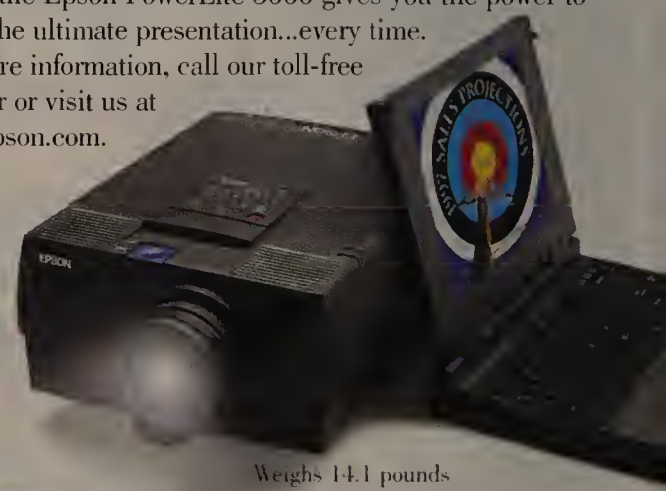
The world leader in high-performance, portable projectors. With 450 ANSI lumens, it's the brightest portable SVGA projector in its class, so you can make brilliant presentations *without* turning off the lights. All of this comes in a compact package that weighs about 14 lbs., so it is easy to take on the road. Plus, Epson's revolutionary SizeWise™ Resizing Technology even reproduces high-resolution XGA images with astonishing clarity.



*The **Power**Lite 5000 is the newest member of our award-winning line of 3-LCD high-performance projectors.*

Greater versatility and ease-of-use. In just seconds, you can connect to two computers (PC/Mac) *plus* a VCR, simultaneously. The Epson PowerLite 5000 supports full-motion video, colorful text, animated graphics and 3-D stereo sound to add more impact to your multimedia presentations. And with our new Chronos™ lamp, you can get about five years of lamp life, without the hassle or expense of constant lamp changes. For added confidence on the road, Epson's Road Service Program can offer a replacement projector, usually overnight.

So, whether you're going around the corner or around the world, the Epson PowerLite 5000 gives you the power to make the ultimate presentation...every time. For more information, call our toll-free number or visit us at www.epson.com.



Weighs 14.1 pounds

1997 SALES PROJECTIONS

10MM

20MM

30MM

TARGET MARKETING

For Free Video call 1-800-442-1977 and ask for operator 3028.

YOU'VE GOT TO SEE IT IN EPSON COLOR.™

Epson is a registered trademark of Seiko Epson Corp. PowerLite, SizeWise and Chronos are trademarks of Epson America, Inc. All other trademarks are the property of their respective owners. Award and nomination given to the ELP-3000, the first in Epson's line of projectors with 3 LCD technology. Chronos lamp life based on 8 hrs. use/week, 50 weeks/year. Road Service Program valid in US and Canada only and is free while under Epson's one-year limited warranty. ©1996 Epson America, Inc.

New Products

THE LATEST MACINTOSH RELEASES

Edited by Keith Mitchell

COMMUNICATIONS

Can't Drive 55

Put the pedal to the metal and surf at 56 Kbps with new modems from U.S. Robotics (847/676-7010, *http://www.usr.com*) and Motorola (847/576-5000, *http://www.mot.com*).

• U.S.R.'s $200 modem uses x2 technology to boost Internet download speeds up to 56 Kbps. Owners who purchased the U.S.R. Sportster 33.6 after August 15, 1996, can upgrade to 56 Kbps for $60.

• Motorola's ModemSurfr 56K comes in a $159 internal version and a $179 external model. The VoiceSurfr 56K adds answering-machine and speakerphone capabilities.

DISPLAY

Big Projection, Small Package

Projectors keep getting more portable. Here are three new lightweight entries.

• Boxlight (360/779-4479, *http://www.boxlight.com*) has released the Model 3700, an $8199 SVGA projector with 800 by 600 resolution and a brightness of 450 lumens. It weighs 12 pounds.

• In Focus's (503/685-8888, *http://www.infocus.com*) $9199 LitePro 720 weighs less than 12 pounds, offering 800 by 600 resolution and a brightness of 450 lumens.

LitePro 720

• CTX Opto (408/541-6060, *http://www.ctxopto.com*) offers the $6495 EzPro 550. This projector weighs in at 9.8 pounds and offers 800 by 600 resolution and a brightness of 270 lumens.

Budget Monitor

Hansol Multitech (714/562-5151, *http://www.hansol-us.com*) is giving monitor buyers more bang for the buck with the 15PX, a $379 15-inch monitor with a 13.8-inch viewable area, 1280 by 1024 resolution, and 0.28mm dot pitch.

GRAPHICS

A Model Citizen

ModelShop 3.0 is a 3-D modeling package geared toward interior, site, city, and building design. Formerly a Macromedia product, it is now offered, for $399, by Electric Cafe (415/675-7480, *http://www.eleccafe.com*). The latest version adds photo-realistic rendering, including fog, transparency, and shadows. It also supports VRML 2.0, QuickTime VR 2.0, and QuickDraw 3D 1.5. Owners of ModelShop II can upgrade for $99.

ModelShop 3.0

Photoshop Unmasked

Adding to its growing line of extensions and plug-ins, Extensis (503/274-2020, *http://www.extensis.com*) has announced Mask Pro, a plug-in that offers enhanced masking capabilities to Adobe Photoshop users. The program is due to ship by June 1, and will cost $300.

Picture This

New formats and tools grace the new version of Live Picture (408/438-9610, *http://www.livepicture.com*). Version 2.6 now supports the FlashPix graphics format and adds tools to create and edit textures, gradients, and paths. The $695 package requires at least 24MB of RAM.

MULTIMEDIA

mPressive Upgrade

mFactory (415/548-0600, *http://www.mfactory.com*) has released the first major upgrade of mTropolis, its popular multimedia authoring software. Version 2.0 adds wizards that run within the program and monitor memory and objects. Other features include new Internet and networking capabilities, and preauthored sets of actions and sequences, called mPacks, that you can apply to objects. mTropolis 2.0 costs $1195; current owners can upgrade for $199.

Hot and Spicy

If the dearth of video transitions has left a bad taste in your mouth, try the Video SpiceRack from Pixélan Software (360/647-0112, *http://www.pixelan.com*). The $179 package includes more than 300 new transitions and effects that work within Adobe Premiere and After Effects, and Media 100 editing software. All effects are broadcast quality and are suitable for MPEG and Web movies.

Cloud Nine

Does 8MB of VRAM, accelerated QuickDraw 3D, 30-frames-per-second QuickTime 2.5 movies at 1600 by 1200 pixels, 128-bit graphics, and 256-bit video—all for $799—sound too good to be true? The Imagine 128-8M visual accelerator card from Number Nine (617/674-0009, *http://www.nine.com*) will make a believer out of you. The card includes support for 24-inch monitors.

Visions of Sound

Opcode (415/856-3333, *http://www.opcode.com*) has released new versions of its Vision and Studio Vision Pro packages. Both programs handle sequencing, recording, and MIDI integration. Vision 3.5 ($395) and Studio Vision Pro ($995) are now Power Mac native. Vision 3.5 can record up to 20 audio tracks and supports Audiomedia cards. Studio Vision Pro 3.5 adds support for Digidesign's Pro Tools II PCI cards and Adobe Premiere DSP plug-ins.

NETWORKING

Free Your Printer

The $695 M204 PCMCIA Print Server from Microplex (604/444-4232, *http://www.microplex.com*) and Lucent Technologies (908/582-8500, *http://www.wavelan.com*) lets you put your printer wherever you want, unhindered by a cable. It's a multiport, multiprotocol wireless print server that uses PCMCIA cards to take advantage of a preexisting wireless network. You can network and access up to eight printers at once.

Your First Network

If you've never done it before, setting up a network can be a chore. That's why Dayna (801/269-7200, *http://www.dayna.com*) created the Network Starter Kit. For $289, novice networkers get a DaynaStar MiniHub-8, three PCI networking cards, three 50-foot 10BaseT Ethernet cables, a setup guide, manuals for beginners, and installation disks.

SCSI Stretching

Forget about the SCSI-chain limitations of cable length and number of devices. The SCSI Expander from Atto (716/691-1999, *http://www.attotech.com*) lets network administrators attach up to 105 SCSI devices to one port. It uses 16-bit Fast/Wide SCSI with transfer rates up to 20 MBps, and it's compatible with SCSI-1 and SCSI-2. A variety of configurations are available, the cheapest of which is $495.

continues

New Products

ONLINE

Where the Action Is

Interactive Media (415/948-0745, *http://www.imcinfo.com*) has given its ActionLine 2.5 authoring tool some added features. A blueprint function shows all interactive actions and graphics built into a Web page. The program now supports mouse behavior and multiple layers of animation. It sells for $199; current owners of ActionLine can upgrade for $49.

Web Maintenance

You can use your browser to securely maintain HTML pages and other files on your Web server with SiteEdit Pro 2.0 from Pacific Coast Software (619/675-1106, *http://www.pacific-coast.com*). The $180 program has new editing features and now supports Microsoft Internet Explorer and ActiveX.

PRODUCTIVITY

FileMaker Resource

Can't get enough of Claris FileMaker? ISO Productions (510/454-0187, *http://www.iso-ezine.com*) is shipping Everything FileMaker, a $40 CD-ROM collection of useful shareware, tips and tricks, and other FileMaker resources.

No More Double Bookings

Meeting Maker 4.0, a new upgrade of the group scheduling application from On Technology (617/374-1400, *http://www.on.com*), adds client and server support for Windows NT. Other features include a snapshot function, which displays a quick view of available times among groups or rooms, and custom print formats. There is a free 30-day trial period, after which Meeting Maker 4.0 costs between $80 and $95 per copy, depending on the number of users. You also need a $299 System Pack that includes server software.

PUBLISHING

Taming VRML

The Official World Movers '97 CD-ROM from Viewpoint Datalabs (801/229-3000, *http://www.viewpoint.com*) includes 1300, 3-D models in the VRML format. The $2500 package features content and tools in four categories: accessories, transportation, nature and architecture. A $250 version includes 300 models from these categories.

The Official World Movers CD-ROM

Out in the Open

Prepress doesn't have to be a bad word, with OPEN 1.1 (Open Production Environment) from Luminous Technology (206/689-6700, *http://www.luminous.com*). The $795 package allows prepress operators to set up custom workflows in which a print job automatically passes through preflighting, color separation, proofing, trapping, and imposition operations. It can also be used in multimedia or Web production.

Pocket-Size Picture Taking

Konica (201/568-3100, *http://www.konica.com*) enters the digital camera market with the Qmini QM-3501. The camera gives digital shutterbugs 640 by 480 resolution, allows a shooting range as close as 3 centimeters, includes an LCD preview, and displays images on television sets. The $600 camera measures only 4 by 4 by 2 inches.

Konica's Qmini QM-3501

STORAGE

Removable IDE

Now there's an internal enhanced IDE version of the SyQuest (510/226-4000, *http://www.syquest.com*) EZFlyer 230 removable drive. The $199 drive uses 230MB cartridges for portable data. The drive plugs into the same connector as the hard drive.

Jukebox Hero

If you need to read and write to multiple CDs, the new Satellite from NSM Jukebox (630/860-5100, *http://www.nsmjukebox.com*) is for you. It holds up to 135 CDs and can accommodate one to five drives, including up to three 6× read/4× write drives. It also uses 12× read-only drives. Pricing begins at $10,000.

Rad RAID Tools

MegaDrive RAID ToolKit 2.0 from MegaDrive (818/700-7600, *http://www.megadrive.com*) is a $299 disk-array–management software package. The new version adds support for CHRP and removable modules.

Rewriteable CD

Ricoh (408/432-8800, *http://www.ricoh.com*) has released the MP6200S, a $599 internal CD-Recorder with rewriteable capability and a SCSI-2 interface. It records at double speed and reads at 6×. CD-RW media will cost $25 per disc and can be rewritten up to 1000 times.

SYSTEMS

Best of Both Worlds

If you need Windows applications on your Mac, Insignia Solutions (408/327-6000, *http://www.insignia.com*) has the answer. Ntrigue Net Client 2.0 allows Macs to access Windows 95, 3.X, and NT applications over an intranet. It costs $195; upgrades from version 1.0 are $29.

New PowerBook Memory

Two companies are now shipping memory upgrades for the PowerBook 3400.

- Lifetime Memory Products (714/444-4700) sells 16MB ($149), 32MB ($259), 64MB ($525), and 128MB ($1695) upgrades.
- Simple Technology (714/476-1180, *http://www.simpletech.com*) offers a 16MB upgrade for $260 and a 32MB upgrade for $505.

UTILITIES

Beyond Screen Shots

CameraMan 3.0 from Motion Works Group (604/685-9975, *http://www.mwg.com*) records the activity on your screen, including pull-down menus, dialog boxes, still screens, animations, video, and game sequences. You can save screen recordings as QuickTime movies, PICS, or sequential PICT, and then view them in Netscape Navigator, Adobe Premiere and Acrobat, and Microsoft PowerPoint. A new version costs $70; current owners can upgrade for $25.

Get Your Code Together

If that program you're writing has gotten out of control, CodeManager 4 from Metrowerks (512/873-4700, *http://www.metrowerks.com*) could be the answer. The $399 package manages millions of lines of code while maintaining version control. This release adds faster database access for network users—up to 16 times faster than the previous version.

VENDORS: TO HAVE YOUR PRODUCTS CONSIDERED FOR PUBLICATION IN *NEW PRODUCTS*, SEND A PRESS RELEASE WITH PRODUCT DESCRIPTION, PRICE, AVAILABILITY, AND CONTACT INFORMATION FOR READERS, PLUS OPTIONAL PHOTO OR SCREEN SHOT, TO NEW PRODUCTS EDITOR, *MACWORLD*, 501 SECOND ST., SAN FRANCISCO, CA 94107; *NEW_PRODUCTS @MACWORLD.COM*.

Mail-In
Offer

$30 REBATE

With the Purchase of a Back-UPS® Office™
between April 1 and August 30.

Just send this completed certificate along with an original UPC symbol from an APC Back-UPS® Office™ box and the original store receipt with the Back-UPS Office circled, and get a $30 rebate! See details.

APC®

888-289-APCC Ext: 8141
Fax: 401-788-2797
E-mail: bkoffice@apcc.com
http://www.apcc.com

Just send this completed certificate along with a UPC symbol from an APC Back-UPS® Office™ box and the original dated store receipt with the Back-UPS Office circled for your $30 mail in rebate!

Mail Coupon to: Back-UPS® Office™ Rebate
P.O. Box 52930
Dept. #10311
Phoenix, AZ 85072-2930

Name: _____

Company/Title: _____

Address: _____

_____

City: _____ State: _____ Zip: _____ Ctry: _____

Phone: _____ E-mail: _____

Additional Terms and Conditions:

1. Offer good in US & Canada only. Rebate in US Dollars only.
2. Store receipts must be dated between April 1, 1997, and August 30, 1997.
3. Requests must be received by September 15, 1997.
4. Customers must send in: - Original UPC labels printed on APC Back-UPS Office packaging, - Original store receipt, - Completed coupon.
5. Only original receipts accepted. Customer can request that their receipt be returned by including a note and a self-addressed stamped envelope with their rebate request.
6. Void where prohibited or restricted by law.
7. Limit five (5) rebates per customer.
8. Proof of mailing does not constitute proof of delivery. APC is not responsible for lost, late, illegible or incomplete orders or postage-due, damaged or sepa rated mail.
9. Not eligible: APC employees, agencies, distributors or resellers.
10. Fraudulent submission of multiple requests could result in federal prosecution under the U.S. Mail Fraud Statues (18 USC, Section 1341 and 1342).
11. Not valid with any other offer.
12. Allow 6-8 weeks for delivery.
13. Offer expires August 30, 1997.
14. Offer only good on Back-UPS Office (UPC code 7 31304 00588 9).
15. APC Reserves the right to rescind promotion at any time.

©1997 APC. All rights reserved. All trademarks are property of their owners. DSN-0189

Mail Code: D7-RE

"They thought my new multipath Back-UPS® Office™ was just a big surge suppressor – then the lights went out."

$30 REBATE

With the Purchase of a Back-UPS Office between April 1 and August 30, 1997.
Simply complete the attached redemption card and send along with an original UPC symbol from an APC Back-UPS Office box and the original store receipt with Back-UPS Office circled, and get a $30 Rebate.

See redemption card for more information. If redemption card is missing please call our PowerFax line at 800-347-FAXX and request literature #1301. Or, download the redemption card from our Web Site at: http://www.apcc.com/english/promo/promo025.htm. You can also fax the coupon below to APC at (401) 788-2797.

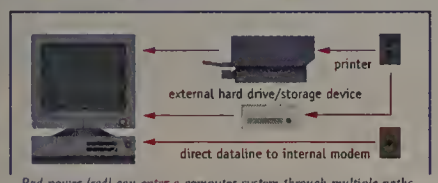
At last, a safe place to plug everything: multipath Back-UPS Office for workstations, PC's and peripherals

Protect ME! APC

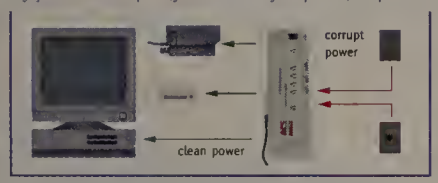
Power problems attack computers relentlessly. Did you know that you have a better chance of winning the lottery than of escaping power problems? They are the single largest cause of computer data loss and hardware damage.

Back-UPS Office provides clean, reliable power for your entire system. Instantaneous battery backup ensures uninterrupted operation of your CPU, monitor and an external storage device. Full-time surge suppression and site-wiring fault protection spreads a true multipath safety net under any remaining peripherals, like modems, printers, faxes and phone systems. Back-UPS Office also provides convenient BlockSafe™ outlet spacing to handle all size plugs – even large transformer blocks.

Multipath Means Total Power Protection



Bad power (red) can enter a computer system through multiple paths – eg. printer, data and phone/fax lines – even if computer A/C is protected.



The Multipath protection of Back-UPS® Office™ shields your peripherals and guards your computer from bad power on every path, providing clean, safe power (green), to your entire system.

Unique multipath protection keeps your PC and data safe

Plugging phone lines or other peripherals into your computer increases your vulnerability to power problems. When a surge hits an unprotected peripheral, it can blaze down serial cables and datalines, and toast your expensive PC. Multiple peripherals and datalines to and from your system are vital, but dangerous. Without them you can't do your job. If a power sag locks your keyboard or reboots your computer before you've saved work, or while you are downloading from the Internet, you can lose data, time and money. Don't spend another late night at the office to meet your deadline. Join over 6,000,000 computer users worldwide who prefer APC to protect hardware and data.

Back-UPS Office protects your entire system

Until now, protection for your entire system required several devices. Back-UPS Office means clean, safe power to every peripheral, and instant battery backup to keep your system from crashing. It means protection for less by integrating the security of a surge suppressor with the power of a UPS, guaranteed up to $25,000.

LIFETIME EQUIPMENT PROTECTION $25,000

FREE SOLUTIONS GUIDE!

Just complete the information below and send to APC to receive redemption information regarding the $30 Rebate Offer. We'll send you a Free 60 Page Solutions Catalog just for filling out the coupon!

☐ **YES!** Send me a $30 Rebate Redemption Card.

☐ **NO** I'm not interested at this time but please send me a free 60 Page Solutions guide.

Name: _____
Title: _____
Company: _____
Address: _____
City/Town: _____
State: _____ Zip: _____ Country _____
Phone: _____
How many workstations on site? _____
Brand of UPS used? _____

APC® Dept. D7-RE

(888) 289-APCC x8141
Fax: (401) 788-2797 • http://www.apcc.com

©1997 APC. All Trademarks are the property of their owners. BF08EF • (800)347-FAXX PowerFax • CompuServe: GO APCSUPPORT • 132 Fairgrounds Road, West Kingston, RI 02892 USA

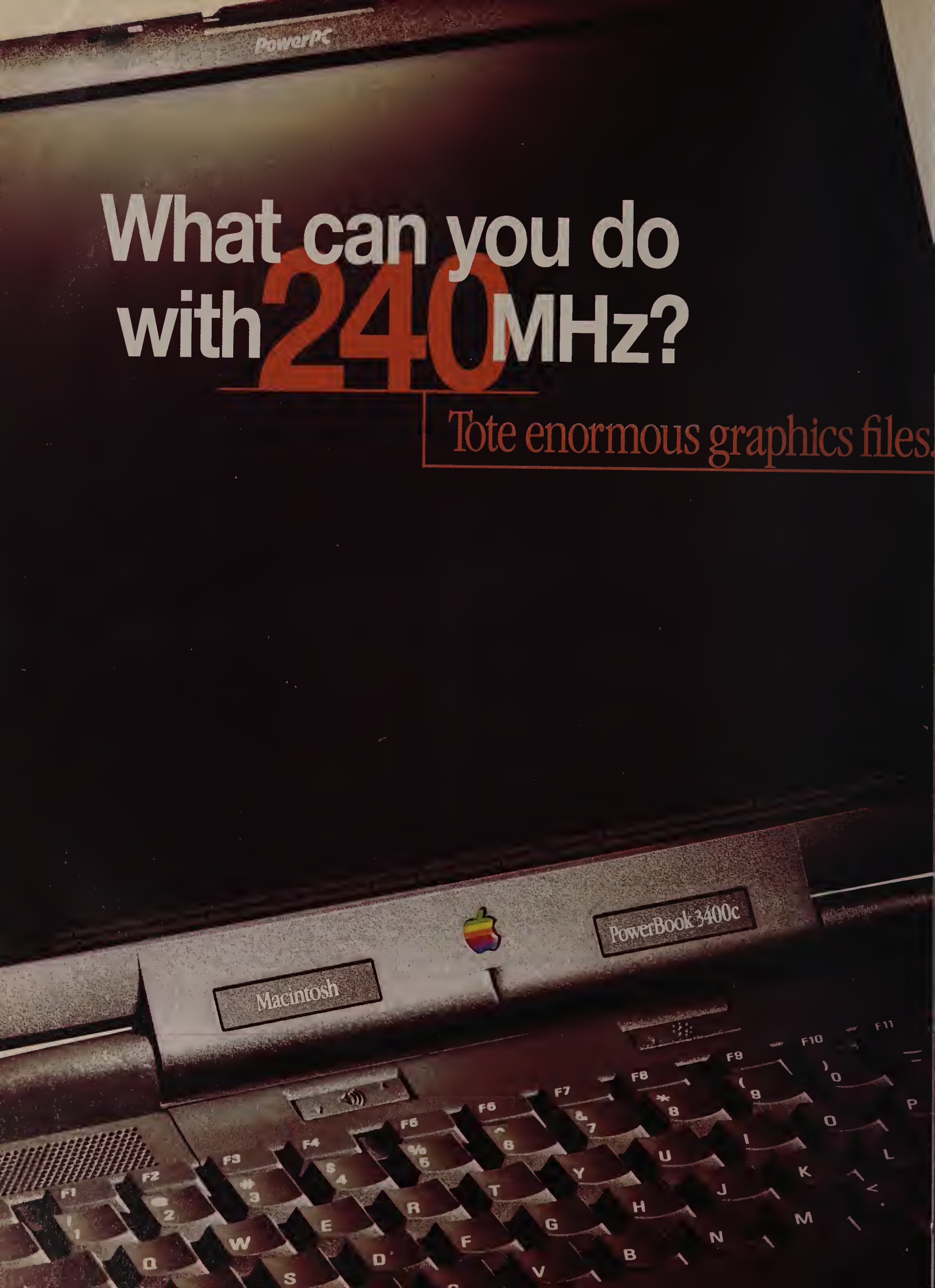
APC has won more awards for reliability than all other UPS vendors combined.

W 100 · PC Computing APPROVED · PC World 20 Best Upgrades · PC MAGAZINE EDITORS' CHOICE

Circle 72 on reader service card

What can you do with 240 MHz?

Tote enormous graphics files!



There's no shortage of things you can do with our best-selling PowerBook 1400, either. Play CD-ROMs, surf the web and send e-mail to your boss back at the office.*

Incite rubbernecking.

Run your own in-flight movie.

We didn't build the world's fastest laptop just to show off. But that's not to say you can't. Among its numerous talents, the PowerBook® 3400 is the ideal laptop for presentations. Its awesome speed means faster, more beautiful graphics, and its 12.1-inch diagonal screen is the perfect canvas to display your genius for persuasion.

But don't let the 3400's blinding speed blind you to its other features. Like its hot-swappable expansion bay. It lets you add all manner of drives, whether floppy, magneto-optical, CD-ROM or a second hard drive. All without putting your computer to sleep. To keep you connected, there's also a built-in Ethernet/33.6 Kbps modem.

At the risk of sounding immodest, there's no end to what you can do with the new PowerBook 3400. To learn more, visit www.powerbook.apple.com. Or call 800-538-9696 for the name of the Apple reseller nearest you.

Reviews

Low-Cost Digital Cameras

FIVE SUB-$1000 DEVICES RAISE THE BAR FOR AFFORDABLE IMAGES

KEVIN CANDLAND

A SCANT FOUR MONTHS AFTER we examined every low-end digital camera available for the Mac (see "Digital Cameras: Picture It Now," *Macworld*, March 1997), five spanking-new models have debuted: Apple Computer's QuickTake 200, Epson America's PhotoPC 500, Eastman Kodak's DC25, Olympus America's D-300L, and Sony Electronics' DSC-F1. But although none of these cameras are more than a few weeks old, all but one of the new devices bear striking resemblances to cameras of a season ago.

The QuickTake 200 is virtually identical to Fuji's DS-7, *Macworld*'s 1997 World Class Award finalist. The PhotoPC 500 looks like the original PhotoPC with a clunky LCD screen stuck to its side. Kodak's DC25 is larger than the DC20, but the controls and functionality are barely altered. And the Olympus D-300L is merely a higher-resolution version of the D-200L with a gold finish.

Only the Sony DSC-F1 is entirely new. But Apple, Olympus, and the others have done more than merely slap a new label on old equipment. Although I'm not overjoyed by every model, each is an improvement over its predecessor. Even Epson and Kodak—whose products I regard with the least enthusiasm—are working to correct their past mistakes.

See What You Snap

All five new cameras offer LCD screens so that you can play back images after you shoot them. This way, you can confirm your shots while you're on location and make changes immediately—or reshoot—if warranted. In most cases, the LCD screen is built into the back of the camera, just below the viewfinder. The one exception is the PhotoPC 500, for which the LCD is an optional $199 accessory. This awkward appendage snaps onto the left side of the camera and sticks out a good 3 inches, making the PhotoPC more than twice as wide as the narrowest camera, Sony's DSC-F1. Worse yet, you have to disconnect the LCD in order to download the images to a computer.

All five cameras also let you use the LCD as a framing tool when shooting pictures. But some cameras are better at this than others. Bringing up the rear is the DC25: Kodak is so worried you'll burn through your batteries that it makes live LCD preview as inaccessible as possible. You have to press and hold two very small buttons at the same time for three seconds. After you've cramped up your wrist with this clumsy maneuver, the DC25 rewards you with a sluggish refresh rate of three to four frames per second, just fast enough to give you a sense of

REAL PRODUCTS REAL RATINGS Reviews you can trust: Unlike other publications, Macworld rates only final shipping products, not prototypes. What we review is what you can actually buy.
Outstanding ★★★★★= 9.0–10.0 Very Good ★★★★= 7.0–8.9 Good ★★★= 5.0–6.9 Flawed ★★= 3.0–4.9 Unacceptable ★= 0–2.9

where you *were* pointing the camera. I quickly gave up on this unpleasant little feature and went back to the viewfinder.

Using a live LCD preview with the Olympus D-300L is likewise a nuisance—you have to press and hold a button on the back of the camera if you want the screen to stay on. Still, I have to credit the D-300L for delivering a decent frame rate.

The best LCD screens belong to the QuickTake 200 and Sony DSC-F1. Both are easy to use, both deliver frame rates of 30 fps or better, and both are intended to be used as full-time framing devices. The QuickTake 200 includes a snap-on viewfinder (not supplied with its earlier twin, the Fuji DS-7) for those times when the light is too bright to make the LCD practical. The DSC-F1 omits the viewfinder altogether, but Sony provides a rechargeable battery with an AC adapter—you can restore the DSC-F1's juice simply by plugging the camera into the wall. Shame on the other vendors for not following suit—disposable cells are not only wasteful, but expensive. It's not unusual to have to replace batteries every third or fourth time you walk out the door.

Storage and Picture Quality

Three of these five cameras offer expandable storage, and they all go their own way. Surprisingly, not one of these cameras accepts a standard PC card. Like its predecessor, the PhotoPC 500 lets you snap in a memory board, but where the older-model PhotoPC locked you into the first upgrade you installed, the 500 lets you switch out a low-capacity card for a higher one. Still, as removable storage goes, Epson's solution is a pain in the neck—it took me five minutes of tugging to remove the memory-board cover.

Apple and Kodak provide more acceptable solutions. Devoid of internal memory, the QuickTake 200 relies on wafer-thin SmartMedia cards. A 2MB card is included—enough to hold 22 maximum-resolution images—and it's a breeze to switch in and out. The DC25 accepts a so-called Picture Card, a little thicker than the SmartMedia but otherwise similarly small (about 2 by 2 inches). An adapter permits you to use the Picture Card with standard PC Card readers.

Although removable media is great, the Sony and Olympus models fare nicely without it. The DSC-F1 always shoots 640-by-480-pixel images, but you can select from three compression settings. Equipped with a hefty 4MB of internal RAM—twice as much as the Epson and Kodak models—the Sony holds a whopping 58 pictures at medium compression and 30 at low compression (maximum quality). The latter setting provides sharper image detail than any of the cameras except the Olympus. Alas, this modest boost in quality has its price: the DSC-F1 costs $250 more than the comparably equipped QuickTake 200.

All five of these cameras let you preview and delete specific images without your computer, a feature that was still cutting-edge during our last roundup.

If you're looking for great picture quality, the Olympus D-300L is the camera to buy. Not only does it provide 2.5 times as many pixels as the other cameras, but those pixels emerge in better shape (compare the images in "Still Life with Bananas"). Equipped with 6MB of internal memory, it holds 30 images, making it the best value of any digital camera on the market. In fact, only one camera under $5000 delivers better pictures—the Polaroid PDC-2000—but it costs about four times as much. The D-300L's only downside: I encountered a small amount

continues

Still Life with Bananas

Shot in natural light, these pictures appear exactly as they were photographed, with slight gamma adjustments to account for printing and CMYK conversion. The Apple QuickTake 200, Epson PhotoPC 500, and Sony DSC-F1 images each measure 640 by 480 pixels. The DSC-F1 provides the sharpest detail of the three, while the QuickTake 200 provides the brightest colors. The color and detail of the Kodak DC25 image are quite good (given the camera's 493-by-373-pixel resolution), but its poor LCD preview makes framing difficult, as the off-center image illustrates. The best picture quality comes from the Olympus D-300L, making the most of its 1024-by-768-pixel image size.

Apple QuickTake 200

Epson PhotoPC 500

Kodak DC25

Olympus D-300L

Sony DSC-F1

Snap Facts: Low-Cost Digital Camera Features Compared

Company	Apple Computer	Eastman Kodak	Epson America	Olympus America	Sony Electronics
Product	QuickTake 200	DC25	PhotoPC 500	D-300L	DSC-F1
Star Rating [A]	★★★★/7.3	★★/4.9	★★★/6.1	★★★★/7.4	★★★★/7.1
Price	$599	$499	$499 [B]	$899	$849
Phone number	408/996-1010	716/724-4000	310/782-0770	516/844-5000	408/432-0190
Web address	*www.apple.com*	*www.kodak.com*	*www.epson.com*	*www.olympus.com*	*www.sony.com/image*
Camera dimensions (w × h × d, in inches)	5.1 × 3.0 × 1.9	5.1 × 2.8 × 1.6	5.5 × 3.2 × 2.1 (8.5 wide with LCD)	5.7 × 2.8 × 1.8	4.1 × 3.1 × 1.6
Weight (with batteries, in ounces)	11	10	14 (19 with LCD)	14	11
Maximum image size (in pixels)	640 × 480	493 × 373	640 × 480	1024 × 768	640 × 480
On-board memory	none	2MB	2MB	6MB	4MB
Expandable storage	yes	yes	yes	no	no
Storage capacity [C]	22 [D]	14	30	30	58
Closest focal distance (in inches)	3.5	24	24 (8 with LCD)	8	3
Built-in flash	no	yes	yes	yes	yes
LCD preview and playback	yes	yes	optional	yes	yes
Optical viewfinder	snap-on	yes	yes	yes	no
Automatically saves Photoshop-compatible image previews	yes	yes	no	yes	no
Date-stamps photos	yes	no	yes	yes	yes
Photoshop acquire module	yes	yes	no	yes	yes
Time to retrieve one image to disk in standard format	19 seconds (47K/second)	38 seconds (14K/second)	9 seconds (100K/second)	26 seconds (87K/second)	22 seconds (41K/second)
Rechargeable battery supplied	no	no	no	no	yes
Price includes carrying case	no	yes [E]	yes	no	yes
Bundled third-party software	PhotoDeluxe, PageMill (Adobe), NetCard (PictureWorks)	PhotoEnhancer (Picture Works), Kai's Power Goo (MetaTools)	Home Page [F] (Claris), Postcards from the Net (Network Sound & Light)	PhotoDeluxe (Adobe)	PhotoStudio (ArcSoft)

[A] Based on features, implementation, innovation, performance, reliability, ease of use, and value. (See Star Ratings section for full explanation.) [B] Additional $199 for LCD. [C] Images at maximum size, medium quality. [D] With 2MB RAM (included) [E] After you register camera. [F] Trial version only.

of clipping—where pixels change to random colors—just as I did with the D-200L; Olympus really needs to fix this glitch.

Wacky Extras

Of the five cameras, the Sony is the most fun to use. It's small enough to fit in the palm of your hand, and you can pivot the lens and take pictures of yourself. Sony also offers a Continuous Recording function that shoots four to six pictures in succession—one every 0.2 second, great for capturing moving targets. It's also the only camera that lets you transfer images via an infrared beam (with an optional infrared receiver).

The QuickTake 200 is the first digital camera to include support for Apple's new QuickTime IC (Image Capture) technology, although for now its benefits are few. After loading the thumbnail images from the camera, you can drag a thumbnail and drop it into a compliant application such as Adobe PageMill (bundled with the QuickTake) or Photoshop. On my Umax SuperMac S900/200DP, the image moved directly from the camera to the application RAM in 16 seconds.

One thing I miss about the QuickTake 200: you can't mount the camera on your computer's desktop, as you could with the QuickTake 100 and 150. As a result, it takes longer to transfer images from the camera, about seven minutes for a full "roll" of images compared with less than one minute in the past.

Macworld's Buying Advice

For all the details, be sure to consult the table above and compare the features that matter most to you. The table conforms to the same basic organization we used in the March roundup, so you can compare the new batch of cameras with older (but hardly obsolete) models such as Kodak's DC50 and Polaroid's PDC-2000/40. (The new table does not document zooming, because none of the new cameras offer that capability. If zooming is important to you, your best bet is still the DC50.)

If you're in the market for an inexpensive digital camera with medium picture quality—good enough for newsletters and Web pages—choose the QuickTake 200. Though it lacks a flash, it takes pictures in low light and shoots as close as 3.5 inches. The Sony DSC-F1 is a close second—with a flash, a rechargeable battery, and compact design—but the Sony's higher price and lack of removable storage make the QuickTake a better deal.

If color, focus, and resolution are your foremost concerns, the Olympus D-300L is the clear winner in the sub-$1000 range. It offers the best pixel-to-price ratio of any camera currently on the market. Priced just $50 more than the Sony, this is the camera I'd be most likely to buy myself.—DEKE McCLELLAND

Microtek ScanMaker® E6. Higher Resolution 30-bit Scanning.

ScanMaker E6 shown with optional Transparent Media Adapter (sold separately)

Look Carefully. Choose Wisely. In the market for a 30-bit scanner? Take your time. Compare. And look at the specs very carefully. Because when you want a 30-bit scanner, 300 x 600 dpi optical resolution just won't cut it. For the best image results insist on a 30-bit scanner with 600 x 1200 dpi optical resolution which gives you the power to enlarge small originals or capture extremely fine detail. Settle for anything less and you may get caught short. When you're ready to buy, we're confident you'll choose your 30-bit scanner from the company that virtually invented desktop scanning — *Microtek*.

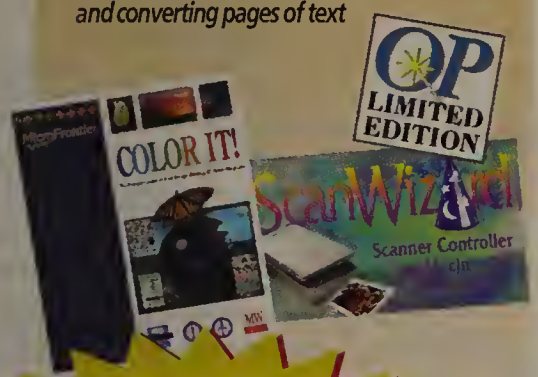
Get More For Your Money. The *30-bit single-pass Microtek ScanMaker® E6 color flatbed scanner* features 600 x 1200 dpi optical resolution (4800 x 4800 dpi enhanced). But it's also an incredibly fast scanner that doesn't sacrifice image quality for speed. In fact, in a recent test of 27 brandname scanners by *PC Magazine* (3/4/97), the ScanMaker E6 tied for image quality with two of its more expensive competitors.

Even More Bang For Your Buck. Purchase the Microtek ScanMaker E6 or ScanMaker E6 Pro and you'll also get Microtek's easy-to-use, award-winning *ScanWizard*™ which lets you enhance images even before you scan them! It's the scanning software that PC Magazine called "...arguably the best in the business..."

Choose Quality. Choose Microtek. If you need more information, call 1-800-654-4160 or our Auto Tech fax-back line at (310) 297-5101. And of course, you can visit our award-winning Web site. Point your browser to: www.microtekusa.com.

MICROTEK ScanMaker E6

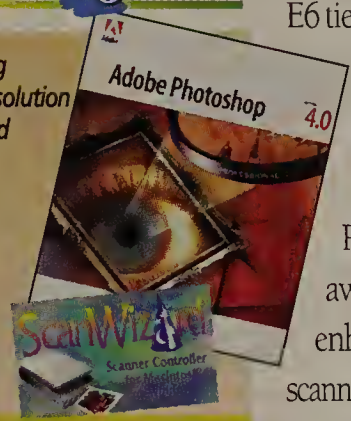
- *Fast single-pass scanning*
- *600 x 1200 dpi optical resolution*
- *4800 x 4800 dpi enhanced resolution*
- *Microtek's ScanWizard scanning software*
- *MicroFrontier's Color It!*
- *Caere's OmniPage Limited Edition OCR software for scanning and converting pages of text*



New Lower Price
$359!
ScanMaker E6
Suggested Street Price.
Was $499

MICROTEK ScanMaker E6 Pro

- *Fast single-pass scanning*
- *600 x 1200 dpi optical resolution*
- *4800 x 4800 dpi enhanced*
- *Microtek's ScanWizard scanning software*
- *Adobe Photoshop 4.0 full-version*
- *TextBridge Pro OCR software for scanning and converting pages of text*



NOW INCLUDES:
TextBridge® PRO
Duplicates your original page!

New Lower Price
$559!
ScanMaker E6 Pro
Suggested Street Price.
Was $649

MICROTEK
Better Images Through Innovation.

Available at: Computer City • Creative Computers • Fry's Electronics • MicroCenter • FutureShop • Elek-Tek
or through: MacConnection • MacMall • MacWarehouse • MacZone

Prices mentioned are United States suggested street prices. Bundled software on CD-ROM. All products mentioned are trademarks or registered trademarks of their respective holders.
Prices, specifications and software bundles are subject to change without notice. E6FM197

Claris Emailer 2.0

E-MAIL INNOVATOR GETS A FACE-LIFT AND SPEED BOOST

CLARIS EMAILER WAS THE FIRST program to let you retrieve *all* your e-mail—whether from America Online, CompuServe, RadioMail, or the Internet—from a single in-box. Two years later, it's still the only e-mail program that lets you do that; its closest competitor, Qualcomm's Eudora Pro (see *Reviews*, November 1996), handles only Internet mail. Emailer 2.0 also edges out the competition with a much-easier-to-use interface, an Easy Setup wizard for new users, and the fact that multiple users can share a single copy of the program.

It's Been Claris-ized

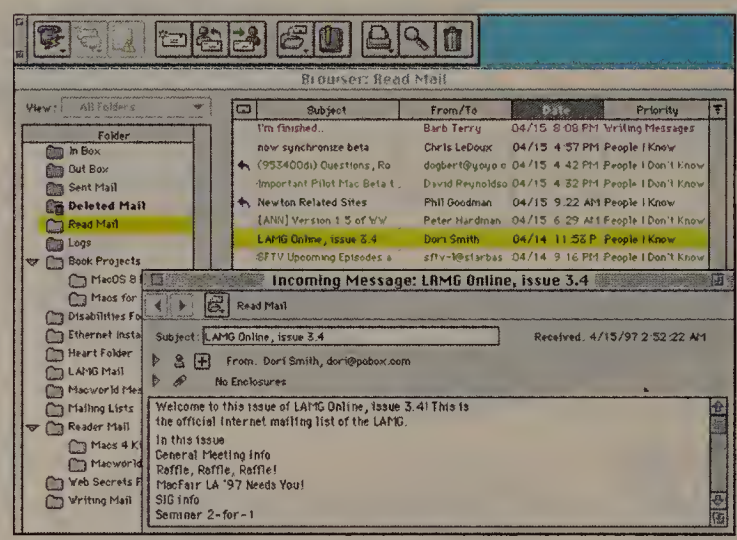
If you're familiar with Emailer, you can't help but notice version 2.0's new look. Replacing the four-tabbed window of yore is a single two-paned window (see "You've Got Mail!"). Mail folders are listed on the left; when you click on a folder, its contents (the mail messages) are displayed on the right. You can still sort messages by subject, from/to, date, priority, and account, but the real action is in the folder pane: folders can now contain subfolders, which you list by clicking on triangles similar to the Finder's.

Version 2.0 also puts the most-used functions on a tool bar strongly resembling the one in Claris Organizer. But while Organizer lets you drag text onto almost any tool-bar button to make something happen, Emailer doesn't; for example, you can't drag an e-mail address to a button to add it to the address book. Still, drag and drop is one of Emailer's highlights. You can add enclosures by dragging files from the Finder to the message form, and easily move text within or between windows (or even applications).

Emailer 2.0 also adds extensive AppleScript support, along with a menu to which your scripts are added. Claris and third-party developers are hard at work making useful scripts available as freeware and shareware.

Taking Action

Another big improvement in version 2.0 is Emailer's mail actions, which filter your messages according to the rules you specify. A single mail action can now trigger several effects, such as setting a message's priority, filing it in a mail folder, adding the sender to the address book, and even running an AppleScript. (Version 1.0 allowed only one effect per mail action.) And you can now perform as many tests on a message as you like—for example, to filter junk e-mail (spam). My spam filter checks each message's sender against a list of known offenders. If it finds a match, the filter changes the message's priority to "Spam!" and deposits it directly in my Deleted Mail folder.



You've Got Mail! Emailer's new interface makes it easy to choose from any of your personal mail folders. Mail is color-coded by priority, and the new tool bar simplifies mail handling.

I do have two complaints about the revamped mail actions, though. The interface for multiple tests is a bit geeky for my taste; trying to predict what will happen to a message can seem a bit like a logic puzzle or an IQ test. Because you have to reason out the logical effect of each test, combining many tests into one mail action can get confusing. And although a mail action can trigger an AppleScript, an AppleScript can't create or modify a mail action. That's unfortunate; to use the mail-filter example, you should be able to write a script that adds new spammers to your filter rather than opening the Mail Actions window and adding them manually.

One of Emailer's best new features is that it stores all mail in an internal database rather than as separate files. The result is that messages take up less disk space, the program feels more responsive, and finding a message is much faster. Version 2.0 also fixes a big problem in the original Emailer: it can control FreePPP and Open Transport/PPP, so modem users can both connect to and disconnect from the Internet automatically (in version 1.1 users have to close the connection manually). Other minor but welcome additions are the standard Claris spelling checker and help features, support for multiple signatures, and the ability to handle an unlimited number of accounts per online service or ISP (previous versions limited you to five each).

The Emailer team still has quite a bit of work to do. Address groups haven't improved since the last version (group records aren't linked to the address-book record, so you have to make address changes in both sets of records); the program still can't access CE Software QuickMail and SoftArc FirstClass mail servers; and some features that have been in Eudora Pro forever—such as Redirect, which forwards a message without adding forwarding information to the message—are still lacking in Emailer. Finally, while Eudora Pro has been cross-platform for about a year, Claris isn't expected to offer Windows 95 and NT versions of Emailer until later this year.

Macworld's Buying Advice

If you have multiple Internet accounts—particularly if you have an America Online or CompuServe account in addition to your Internet service—Emailer is your best choice. Even if all your e-mail comes through a single Internet account, Emailer's straightforward approach tips the scales against the powerful Eudora Pro. For my money, Emailer is the best e-mail client currently available for the Macintosh.—TOM NEGRINO

RATING: ★★★★/8.2 **PROS:** Improved interface; excellent mail actions; scriptable; faster. **CONS:** Address book still needs work; new tool bar could be more convenient; no Windows versions. **COMPANY:** Claris (408/727-8227, *http://www.claris.com*). **LIST PRICE:** $49.

COREL®

For Macintosh®

WordPerfect® 3.5

Work Faster, Smarter, Easier than Ever.

Smart Functions

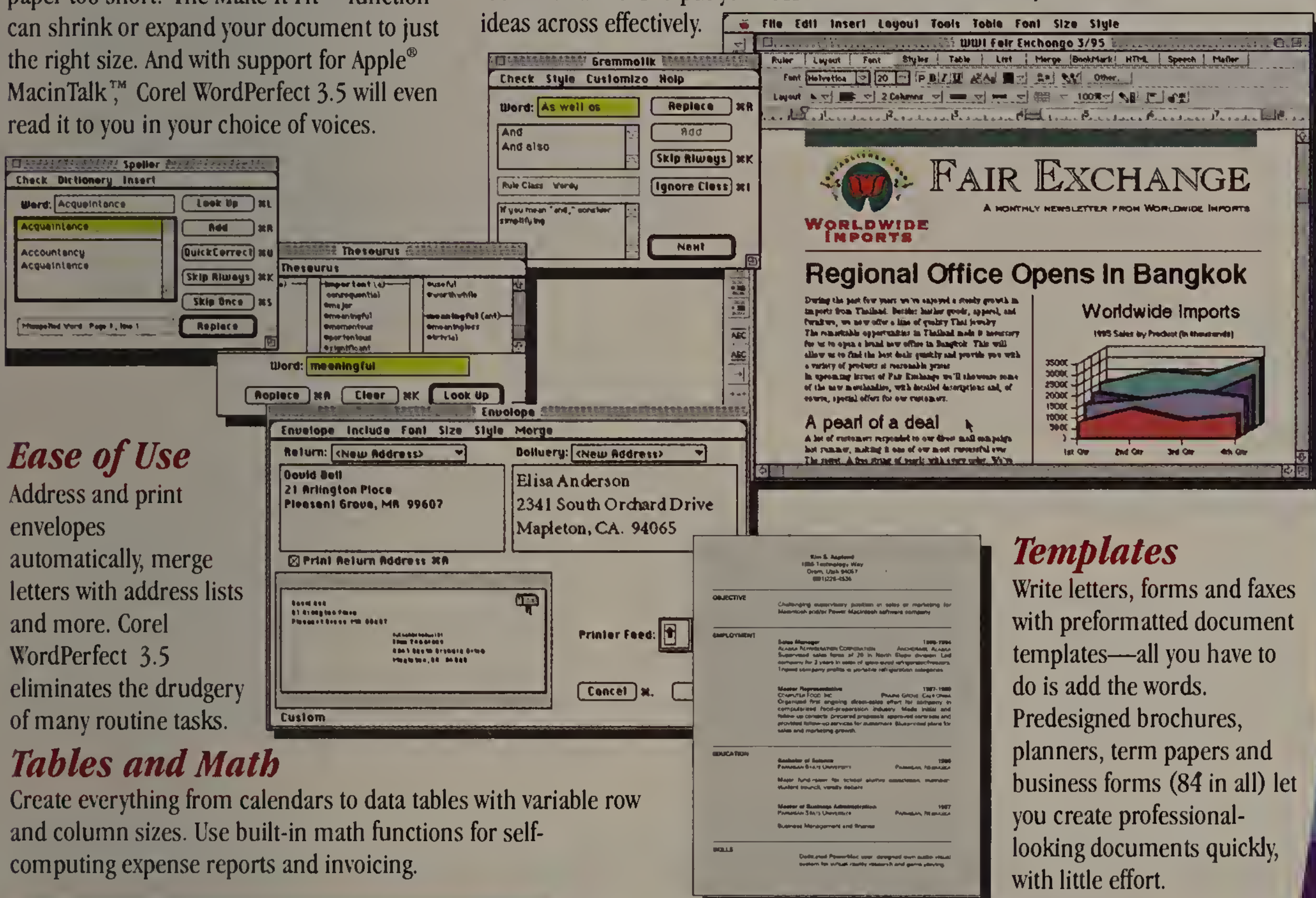
Let Corel® WordPerfect® 3.5 check grammar, style and spelling for you. It can even correct typos as you go! Is a letter too long—or a paper too short? The Make It Fit™ function can shrink or expand your document to just the right size. And with support for Apple® MacinTalk,™ Corel WordPerfect 3.5 will even read it to you in your choice of voices.

Document Design Tools

Choose from hundreds of easy-to-use formatting tools to tame even the most complicated documents. Use columns, text boxes, bullets, headers, footers and more to put your best ideas across effectively.

Internet Tools

Read and publish information with ease on the World Wide Web! Netscape Navigator™ Internet browser, combined with Corel WordPerfect 3.5's new HTML tools, lets you explore the "Information Superhighway" and create and edit your own HTML documents.



Ease of Use

Address and print envelopes automatically, merge letters with address lists and more. Corel WordPerfect 3.5 eliminates the drudgery of many routine tasks.

Templates

Write letters, forms and faxes with preformatted document templates—all you have to do is add the words. Predesigned brochures, planners, term papers and business forms (84 in all) let you create professional-looking documents quickly, with little effort.

Tables and Math

Create everything from calendars to data tables with variable row and column sizes. Use built-in math functions for self-computing expense reports and invoicing.

The #1 word processor for the Mac®

Amazing Value!

- Corel® WordPerfect® 3.5
- Netscape Navigator™
- MasterJuggler® Pro
- 5,400 clipart images
- 150 TrueType® fonts
- 200 photos

Key Features

Internet Publishing Tools

- Create, import and export HTML
- Netscape Navigator™ Internet browser

New Features

- Bookmarks with hyperlinks
- Ability to "speak" text
- Make It Fit™
- Easy envelopes
- Easy-to-use templates
- Corel® WordPerfect® 7 conversion

Apple® Technology Support

- Apple® Guide
- Easy Open
- Cross-application drag and drop
- QuickDraw™ GX printing
- PowerTalk™ (AOCE)
- MacinTalk™
- AppleScript™
- WordScript®
- QuickTime™

Page Layout Features

- Columns (3 types), up to 24
- Styles, kerning, borders
- Text boxes
- Headers and footers

Graphics Features

- Drawing and Equation Editors
- Page overlay/watermarks
- Bézier curves
- TIFF, EPS, PICT, JPEG, GIF

Documentation Processing Features

- Macros
- Integrated grammar checker
- Speller/Thesaurus
- Sort/Merge/Outlining
- Corel WordPerfect conversions for DOS, Windows®, UNIX and VAX
- New imports for Microsoft® Word 6.x, MacWrite II, RTF and text

SYSTEM 7.5 Mac OS

Corel and WordPerfect are registered trademarks of Corel Corporation or Corel Corporation Limited. Apple and Macintosh are registered trademarks of Apple Computer, Inc. Netscape Navigator is a trademark of Netscape Communications Corp. Microsoft and Windows are registered trademarks of Microsoft Corporation. All other product and company names are trademarks or registered trademarks of their respective companies.

CREATIVE COMPUTERS' MacMall YOUR MAC SUPERSOURCE!

$79.99* Competitive upgrade CD-ROM version

$169.99* Full CD-ROM version

Call Today!
1-800-222-2808

*US$ plus applicable taxes and shipping.

KUR-0260-US

Corel, Official World Title Sponsor of the COREL WTA TOUR

COREL
www.corel.com
Call now for faxed literature!
1-613-728-0826 ext. 3080
Document # 1168

Circle 78 on reader service card

Windows 95 Compatibility Solutions

SOFTWINDOWS 95 IS FASTER, BUT STILL NO MATCH FOR THE ORANGEPC CARD

SHORT OF BUYING A PC, MAC owners who want to run Windows 95 have two options: install a PC-compatibility card, such as Orange Micro's OrangePC 540, or get Insignia Solutions' SoftWindows 95 4.0. The OrangePC offers Pentium speed but is as expensive as a Windows machine, while SoftWindows 4.0's software-emulation approach doesn't even come close to the PCI card's performance.

If speed is what you're looking for, the OrangePC—which comes equipped with a 200MHz Pentium MMX chip—is the obvious choice. In Macworld Lab tests, the card ran several Windows 95 programs as fast as (and sometimes faster than) a fully equipped 200MHz MMX machine, the Sony PCV-120. Overall, the card delivered about 85 percent of the Sony's performance.

But while the OrangePC executed most tasks with impressive speed, it couldn't keep up with the PC when the operations involved frequent hard-drive accesses. For example, the card took about 27 seconds to open a 2MB Adobe Photoshop file that the Sony popped open in less than 8 seconds. The OrangePC was also almost four times slower than the Sony on a mode change in Photoshop, though in other Photoshop operations—such as applying Blur and Sharpen filters—it performed nearly as fast as the PC. The card was also disappointing in tests involving Netscape Navigator, taking almost twice as long to open a file.

The OrangePC card installs easily and provides a video port along with game, serial, parallel, and sound-in and -out connection ports. Unfortunately, its drivers don't work with some CD-ROMs, and the workaround is clumsy.

The follow-on to both the Windows 3.1–only SoftWindows 3.0 and SoftWindows 95 (see *Reviews*, September 1996), version 4.0 includes a set of 32-bit drivers, better SCSI and CD-ROM support, complete support for the Pentium instruction set, and preinstalled copies of Microsoft Internet Explorer 3.0 and Windows 95. But although Macworld Lab's tests bore out Insignia Solutions' claim that version 4.0 is faster than version 1.0, the speed difference is minor. The new version opened Photoshop files more than 13 percent faster, for example, but performed only about 5 percent faster in Navigator. In other applications, the improvements were negligible; performance was particularly weak in operations that required number crunching. Even on a 9600/200 with 48MB of RAM, SoftWindows took more than 36 seconds to open a file that opened in less than 8 seconds on the PC.

Though it can run on any Power Mac, SoftWindows really requires a higher-end 604- or 604e-based machine. Performance improved dramatically when the program was tested on a 9600/200 versus a 7500/100; overall, SoftWindows 95 performed two to three times as fast on the 9600 as on the 7500.

Macworld's Buying Advice

Despite the OrangePC 540's strong performance, its slow disk access and CD-ROM problems may make you wish you'd bought a similarly priced Pentium-based PC. SoftWindows 95 is a less-expensive route to cross-platform compatibility—just forget about games, multimedia, and any other operations in which speed counts. If you must run Windows programs and a PCI card isn't an option, consider waiting for Connectix's soon-to-be-released Pentium PC emulator, Virtual PC.—JOSEPH SCHORR

OrangePC 540

RATING: ★★★/6.9 **PROS:** Performance comparable to a same-megahertz Pentium PC's; cable for serial-, parallel-, and game-port support. **CONS:** Costs as much as a PC; problems reading some CD-ROMs; slower performance with read/write-intensive programs. **COMPANY:** Orange Micro (714/779-2772, *http://www.orangemicro.com*). **LIST PRICE:** $2456.

SoftWindows 95 4.0

RATING: ★★/4.7 **PROS:** Supports full Pentium command set; relatively inexpensive. **CONS:** Unacceptably slow for most applications. **COMPANY:** Insignia Solutions (408/327-6000, *http://www.insignia.com*). **COMPANY'S ESTIMATED PRICE:** $349 to $379.

Macworld LAB TEST

SoftWindows Still Dramatically Slower Than Hardware Solutions

Longer bars are better. Times are in seconds. Results are times as fast as a Sony PCV-120 200MHz Pentium MMX PC (Pentium 200 = 1.00).

	Microsoft Excel 95	Netscape Navigator 3.0	Claris File-Maker Pro 3.0	Adobe Photoshop 4.0	Macromedia FreeHand 7.0	Macromedia Extreme 3D 2.0	Wolfram Mathematica 3.0
OrangePC 540	1.06	0.57	0.96	0.62	0.95	0.79	1.00
SoftWindows 95 4.0*	0.16	0.10	0.15	0.13	0.15	0.08	0.08
SoftWindows 95 4.0	0.07	0.03	0.07	0.06	0.07	0.03	0.04
*SoftWindows 95 1.0***	*0.06*	*0.03*	*0.07*	*0.05*	*0.05*	*0.03*	*0.03*

**Run on a Power Mac 9600/200 running System 7.5.5 and equipped with 48MB of RAM, a 512K cache, and 4MB of VRAM.*
***Previous version of product tested for comparison.*

Behind Our Tests

We tested all products on a Power Mac 7500/100 running System 7.6, unless noted. All system configurations were equipped with a 256K cache, 2MB of VRAM, and sufficient RAM to provide 32MB to Windows 95 (48MB for SoftWindows and 32MB of RAM for the OrangePC and Pentium systems). SoftWindows was configured with 2MB of delta cache for Windows 95. Virtual memory was disabled for the Mac OS, but enabled for Windows 95.—**Macworld Lab testing supervised by Chris Uiterwijk**

Tab Extra DCS Pre-film Proof

2 Tab Extra Sheets, 2 Sides on 80# Rives BFK

36"x48" Vinyl Poster

8-1/2" x 11" Tent Card

It's art. It's your image. Trust it to Tektronix color printers.

More design professionals choose a color printer from Tektronix, the leader in workgroup color printing, than from anyone. It is because they want the richest, most vibrant, and controllable color in the world. The fastest. The brightest. And the most versatile. All these color printers are cross-platform and connect to networks in a snap. They're economical and reliable. And they'll make all your comps and pre-film proofs worthy of a standing ovation. Which one is best for you? Get your free *Power of Color* interactive CD with print samples and find out!

The Power of Color
Call for your free CD.

Poster-sized prints
On any paper
NEW Phaser 600

Fastest color
Pennies a page
NEW Phaser 350

Photographic print quality
Letter bleed
NEW Phaser 450

Photographic print quality
Tabloid bleed
Phaser 480X

Brilliant color
Any paper both sides
Phaser 300X

1200 dpi color laser
Office workhorse
Phaser 550

Call 1-800/835-6100, Ext. 1369. http://www.tek.com/CPad?1369

Tektronix

Circle 143 on reader service card

1997 Tektronix, Inc. All rights reserved.

GoLive CyberStudio

WEB-SITE BUILDER MAKES AN IMPRESSIVE DEBUT

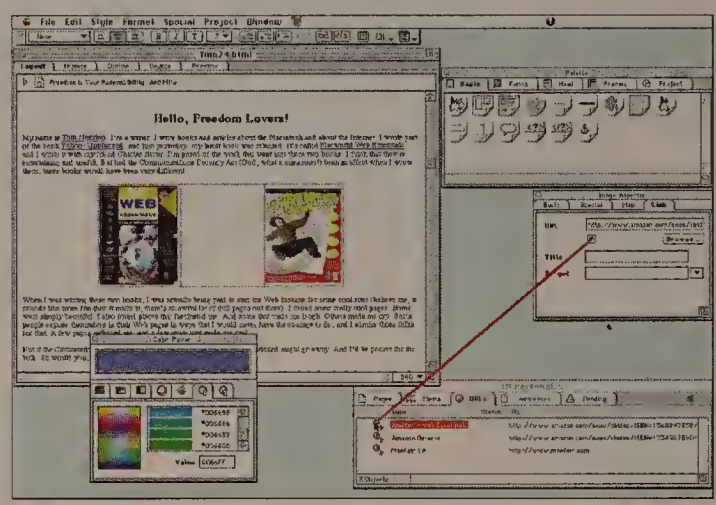
THE NEXT GENERATION OF WEB-site tools is upon us. Starting with NetObjects Fusion (see *Reviews*, May 1997), and now with GoLive CyberStudio 1.0, Web professionals have capabilities they could only dream about a few months ago—precise page layout, advanced site management, and easy uploading via FTP. But these high-end programs take different approaches to site building: Fusion keeps a site's elements in a proprietary format, rendering pages into HTML only when the site is complete, while CyberStudio keeps Web pages in HTML that you can edit at any stage of the process. Given that these days teams commonly build large sites—designers lay out the pages, writers add the content, and programmers add the scripts and CGIs—CyberStudio's approach makes sense because it allows team members to share HTML pages easily.

Easy Page Building

You'll spend most of your time in CyberStudio's Document window, which has tabs for toggling among the layout, preview, frames, HTML source, and outline views. In layout mode, CyberStudio can be either a typical WYSIWYG Web-page editor like Adobe PageMill, or—if you add a layout grid—a pixel-precise program like NetObjects Fusion that lets you drag and place objects anywhere on a page. You can even mix the two approaches on the same page. The preview mode shows you what your page will look like in a browser (though it doesn't preview frames—a glaring oversight), and the frame mode makes it easy to add a frame set; you simply drag frame templates from the tool palette.

All the expected features are here, including tables, forms (up to two per page), image maps (both client-side and server-side), and the ability to insert and view QuickTime, Shockwave, and Java applets without leaving the program. CyberStudio also boasts editors and syntax checkers for HTML and (a first on the Mac) for JavaScript; both color-code the operators to make editing easier. The JavaScript editor lets you add code by dragging from a scrollable list, but its syntax checking could be better; it failed to flag some simple scripting errors. You can edit the database of HTML tags to add new tags, or simply download a new database from GoLive's Web site.

One of the many nice touches in CyberStudio is a small pop-up menu displaying the size of the window in pixels. Because it has preset values for standard monitor sizes, it's a snap to size your pages. Another clever tool is the Color Picker, with tabs for RGB, CMYK, gray scale, indexed colors, the Apple 8-bit color table, and 2 palettes displaying the 216 Web-safe (nondithering) colors. One of those palettes lists the RGB hexadecimal value for each color; the other shows each color's name and hex value.



Shooting a Link CyberStudio makes linking objects exceptionally easy. Here, I'm linking a graphic to a URL. Note the Color Picker, which displays hex values for the Web-safe colors.

Discipline Your Sites

CyberStudio's site-management features are superb. You organize your site's elements in the Project window, which has tabs for Web pages, media (such as GIFs, JPEGs, and QuickTime movies), URLs, and e-mail addresses. CyberStudio gives you the option of creating a project from scratch—by building pages and adding them to the project—or importing all or part of an existing site. You can add files by selecting them from a dialog box, or by dragging them from the Finder into the Project window. When you rename an element (a file or URL) in the Project window, CyberStudio changes the element's name in the Finder and updates all references to it throughout the site.

The site view displays your site's structure in the form of a flowchart to which you can add pages or links. In the link view, lines going to or from a file show how it's linked to other files and make errant links obvious (see "Shooting a Link"). To resolve bad links, which are indicated by a bug icon, you drag a link from the offending element's Inspector window to the correct destination in the Project or Document window.

Almost Perfect

CyberStudio is unusually polished for a 1.0 release, but it has a bug or two. I experienced occasional freezes when trying to preview a media object. GoLive's technical support acknowledged the bug and said it would be resolved in a forthcoming maintenance release.

Along with lots of screen space, CyberStudio requires a Power Mac, System 7.5.5 or later, at least 8MB of application RAM, QuickTime, AppleScript, and a scripting extension. In return, it supports such Apple-specific technologies as drag and drop, Apple Guide, QuickTime 3D, and Hot Sauce MCF (for creating 3-D maps of your Web site).

Macworld's Buying Advice

Because GoLive CyberStudio maintains Web pages in HTML, a site's programmers and writers can add their contributions more easily than in NetObjects Fusion, which keeps the site in a proprietary format until it's published. CyberStudio is also a better value than Fusion, costing hundreds of dollars less. Although it lacks Fusion's ability to change the look of a site merely by changing a template, CyberStudio is destined to become the preferred site builder for Web professionals.—TOM NEGRINO

RATING: ★★★★/8.1 **PROS:** Excellent layout control without sacrificing access to HTML; great site-management tools; lots of cool touches. **CONS:** JavaScript syntax checker doesn't catch all mistakes; you can't preview frames within the program; some bugs. **COMPANY:** GoLive Systems (415/463-1580, *http://www.golive.com*). **LIST PRICE:** $349.

C O M P U T I N G W I T H O U T L I M I T S™

If Your Memory Fails Who Cares What's On Your PowerBook?

Your screenplay. Your stock portfolio. Images from your trip to the Himalayas. There's a lot of valuable stuff on your PowerBook. So why not use the finest components to preserve it? Kingston® memory. At Kingston, we test every cell on every chip on every module. (On a 16 megabyte module, that's 128 million cells.) Since every PowerBook has its own unique memory requirements, we design and test each module specifically for the model in which it will be used. Together, these grueling procedures have helped us become a select Authorized Apple RAM Developer. To find the specific Kingston memory for your PowerBook, just call (800) 259-8965. And before you put anything else on your PowerBook, be sure to put in some Kingston memory.

Kingston® TECHNOLOGY

For more information call us at (800) 259-8965 ISO 9001 SGS *Visit our Web site: http://www.kingston.com/mw.htm*

Kingston Technology Company, 17600 Newhope Street, Fountain Valley, CA 92708 USA, (714) 435-2600, Fax (714) 435-2699. © 1996 Kingston Technology Company.
Kingston is a registered trademark and Computing Without Limits is a trademark of Kingston Technology Company. All rights reserved. All other trademarks are the property of their respective owners.
PowerBook is a registered trademark of Apple Computer, Inc.

Circle 201 on reader service card

CD Accelerators

CD SPEEDSTER, D-TIME OFFER LITTLE BENEFIT

SYNCRONYS SOFTCORP'S CD Speedster and Acceleration Software's d-Time claim to offer significant increases in CD-ROM performance through the use of optimized caching algorithms. In the past, we've reported that CD-ROM accelerators provide little actual speed enhancement (see *Reviews*, June 1996). Unfortunately, d-Time and CD Speedster are no exceptions. In particular, d-Time is far more trouble than its modest speed increases are worth.

Because both of these software packages use data precaching—storing the CD's content in the program's memory for quick retrieval—valuable performance gains are limited to CDs that repeatedly access the same information. With the exception of games, most CDs are used for data storage and distribution, and for software installation. For these uses, performance gains are minimal, and—because of the algorithms' additional overhead—access times can even be noticeably *increased* in some cases (see "CD Accelerators Offer Little Improvement").

CD Speedster scanned and accelerated CDs without incident, and even produced a noticeable speed increase (15 to 20 percent) for a few tasks in informal spot tests using a 2× CD-ROM drive. For the most part, though, overall performance gains were minimal. Using d-Time, on the other hand, has some major drawbacks, ranging in severity from system crashes to decreased speeds. The d-Time user manual admits that "some applications hardly ever use the same data twice . . . [so] using d-Time may not help much"—we found that acceleration was rare, no matter what type of data was stored on the CD.

Both products include analysis software that checks unaccelerated transfer rates and access times, then measures hard-drive speed to calculate potential performance increases. d-Time automatically performs this analysis at installation, producing benchmarks and charts of the resulting values. CD Speedster requires that you launch its BenchPress utility, which consistently produced Type 4 errors on both a Power Computing PowerCenter 150 and a Power Mac 6100/66—we never actually saw what our theoretical speed gain would be with CD Speedster enabled. To test potential acceleration gains for specific titles, d-Time includes the d-Time Mac Status utility. CD Speedster's version is called Speedster Stats, and it generates a series of statistical readouts that are based on real-time performance monitoring.

CD Speedster sports a comprehensive control panel featuring tabbed panes for its various settings and features, and a desk accessory called Speedster Audio. A replacement for AppleCD Audio Player—which CD Speedster overwrites if you don't manually drag Player out of your System Folder prior to installation—Speedster Audio looks and acts even more like a CD deck than the Apple version.

Both packages offer solid documentation and simple installation, although CD Speedster requires that you manually move extensions from the System Folder to prevent them from being replaced. CD Speedster's convenient online help and explanations for most of its components are dramatically more Mac-friendly than d-Time's documentation.

Macworld's Buying Advice

At this point, CD-ROM accelerators still aren't ready for prime time. Of these two products, CD Speedster provides more bang for the buck—especially considering that it's half the cost of d-Time. If you're using a 2× (or slower) CD-ROM drive, CD Speedster can provide modest acceleration in some limited cases; most users, though, will notice little benefit. By comparison, d-Time is a disappointment across the board, with minimal performance gains and unpredictable, unstable design.—FRED DELISIO AND AMY STONE

CD Speedster

RATING: ★★/3.7 **PROS:** Easy-to-use, attractive interface; modest performance gains on older CD-ROM drives for some tasks. **CONS:** Minimal acceleration on newer drives; requires manual removal of some extensions for installation; buggy benchmarking utility. **COMPANY:** Syncronys Softcorp (213/340-4100, *http://www.syncronys.com*). **LIST PRICE:** $29.95.

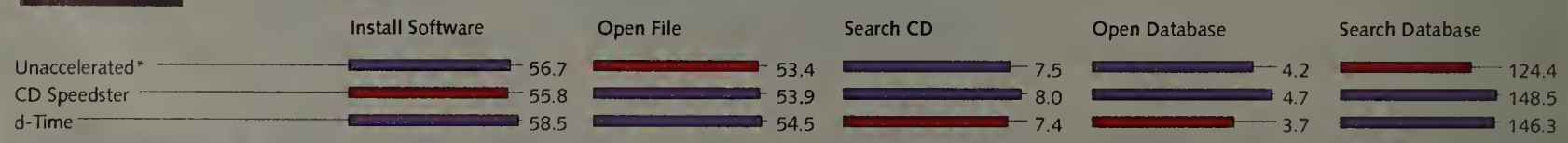
d-Time

RATING: ★/1.5 **PROS:** Easy to install and uninstall. **CONS:** Minimal performance gains; unpredictable results; frequent crashes. **COMPANY:** Acceleration Software (206/224-3727, *http://www.accelerationsw.com*). **LIST PRICE:** $59.95.

Macworld LAB TEST

CD Accelerators Offer Little Improvement

Best result in test. Shorter bars are better. Times are in seconds.



*Apple CD-ROM driver version 5.3.1.

Behind Our Tests

All tests used a standard internal 4X CD-ROM drive on a Power Mac 7500/100 with 32MB of RAM running System 7.6. Disk cache was set to 1024K, and AppleTalk was disabled. For the software-installation test, we performed a custom install of Adobe Photoshop and plug-ins from the Photoshop Deluxe CD-ROM. For the Open File test, we launched Photoshop 3.0 from the internal hard drive and opened a 20MB JPEG file from a CD-R archive. The Search CD test used Grolier's 1996 Multimedia Encyclopedia, and performed a compound search on two terms resulting in 103 results. For database tests, we used Claris FileMaker Pro 3.0v4, launching the application from the internal hard drive and the database from a CD-R archive. With the database open, we searched for a single term.—**Macworld Lab testing supervised by Matt Clark**

Isn't it time to switch your Mac to reliable high speed nationwide Internet access?

It's time to graduate from that miserable online service you've been trying to use. EarthLink Network offers you reliable, high-speed nationwide Internet access with all the goodies you expect, and more, for $19.95 per month.

EarthLink Network®

It's *your* Internet.™

TOLL FREE 1-888-534-7092

COMPLETE SOFTWARE FOR WINDOWS OR MAC E-MAIL FREE WEBSITE FREE 24 HR HELP LINE NEWS
PERSONAL START PAGE™ AOL GRADUATES GUIDE OVER 600 LOCAL DIAL-UP NUMBERS NETSCAPE NAVIGATOR™
NEWSLETTER INTERNATIONAL ROAMING INTERNET BUSINESS SOLUTIONS FROM WEB HOSTING TO HIGH SPEED ACCESS

net
The Net Magazine
"A"-Rated

BYTE
Pournelle's
User's Choice Award

YAHOO! Internet Life
Yahoo's™
"Best of the Best"

©1997 EarthLink Network, Inc. Trademarks are property of their respective owners. All rights reserved. www.earthlink.net

Circle 8 on reader service card

PostScript Utilities

IMAGE ALCHEMY PS 2.1 AND TAILOR 2.0: EXPENSIVE SOLUTIONS TO SERVICE-BUREAU CRISES

NOTHING CAN BRING A SERVICE bureau to a grinding halt like a string of bad PostScript or a client's file that uses an unsupported format. Two useful utilities offer relief from such emergencies: Image Alchemy PS 2.1.4 lets you open and convert graphics files, while Tailor 2.0's full-blown editing tools let you clean up PostScript files. Unfortunately, both programs are hampered by weak interface design and erratic performance.

Different Approaches

Though some of their functions overlap, these programs focus on very different tasks. Image Alchemy is a kind of skeleton key, opening and converting files in more than 70 formats—PostScript, EPS, PDF, and common graphics formats such as JPEG, GIF, and TIFF. The choice of formats is puzzling, though. Alchemy supports Scodl (used by some slide recorders), for example, but not the vastly more common Windows metafile format.

Tailor Made Tailor looks more like an illustration program than a PostScript utility.

Along with straight conversion, Alchemy includes a very basic set of commands for tweaking and resizing images. You can blur or sharpen images; change image size, bit depth, and resolution; and adjust brightness and contrast. You can't balance colors, however, or set levels on a channel-by-channel basis.

If you use Alchemy to reduce the number of colors in an image, you'll appreciate the strong palette controls. The program lets you apply a custom palette to your current image and choose from seven dithering formulas. When you reduce a file's colors or convert a color image to gray scale, you can pick the dithering method that works best with that particular image.

Because Alchemy supports AppleScript and is recordable, you can automate certain functions. And because it supports batch processing, you can convert an entire folderful of files at once without having to open and display each image.

Tailor, on the other hand, is primarily a drawing program that lets you edit the contents of PostScript and EPS files. You can change line characteristics, delete objects, change fonts, and edit text, just as if you were working in an illustration program. The fact that you can create a PostScript file from virtually any program that has a Print command makes Tailor a powerful tool for editing the output from those programs.

But while Tailor lets you edit PostScript files and convert them into other formats, it doesn't support OPI, AppleScript, or spot colors; for those features, you need the $869 Workflow version. A $99 Preview+ version lets you open and view—but not edit—PostScript files.

In my tests, Alchemy had no problem opening files in a variety of formats, but I got less reliable results with PostScript and EPS files. In one case, Alchemy mangled PostScript data that had printed fine (and that opened perfectly in Tailor), cutting off a portion of the image.

Although Tailor did a more consistent job of rendering PostScript, trying to save Tailor files as TIFF images resulted in memory errors until I boosted the program's allocation by several megabytes. And when I printed from within Tailor, anything other than very small, simple files generated PostScript errors.

Tool Problems

Alchemy's range of file-conversion options is impressive, but its unintuitive interface feels slapped together. When you change an image's magnification, for example, an on-screen message tells you the image is being converted when all you're really doing is zooming in or out. If you try to cancel a zoom in progress, the window goes blank; you have to reactivate the Show Image command from the Display menu to restore the image, at which point you again see the "converting image" message. Another serious limitation is that Alchemy can open only one page of a PostScript file or PDF file at a time; you have to reopen the document to look at a different page.

Tailor's richer tool set features five palettes for editing objects, colors, and text (though, as in Alchemy, some of the tools behave in nonstandard ways). Tailor's text-handling commands are particularly powerful: you can split multiple-word objects into words or characters, for example. You can even export all the text in a PostScript file as ASCII or RTF text in one step.

Macworld's Buying Advice

At $495, Image Alchemy PS is no bargain; an image-editing program could handle many of the program's key functions more effectively. Most of the file formats it supports are pretty obscure, and its timesaving batch-processing and scripting features are offset by a slipshod interface and unreliable performance.

Service bureaus and graphics professionals may find Tailor's ability to manipulate PostScript useful for troubleshooting, but they'll have to put up with a weak interface and unreliable performance. For previewing and converting PostScript files into other formats, neither program performs as well as TechPool Studios' Transverter Pro (see *Reviews*, November 1995).—JOSEPH SCHORR

Image Alchemy PS 2.1.4

RATING: ★★/3.9 **PROS:** Supports 70 file formats; batch processing; good AppleScript support. **CONS:** Poor interface; opens PostScript files a page at a time; inconsistent rendering. **COMPANY:** Handmade Software (510/252-0101, *http://www.handmadesw.com*). **LIST PRICE:** $495.

Tailor 2.0

RATING: ★★/4.0 **PROS:** Strong PostScript editing tools; can extract text from PostScript files. **CONS:** Erratic performance; odd interface. **COMPANY:** EnFocus Software (303/393-7282, *http://www.enfocus.com*). **LIST PRICE:** $369.

Also plays as an audio book on home & car stereos.

Why settle for the moon, when you can give your child nine planets, Orion's Belt, and a pink poodle?

Introducing Connie & Bonnie's Birthday Blastoff.™ The latest sign of intelligent life.

Show your kids there's more to outer space than zapping brain-sucking aliens. Our new CD-ROM is *Connie & Bonnie's Birthday Blastoff*, an interactive interstellar adventure offering a view of space second only to the front seat of the Discovery shuttle.

A launch pad for learning.

Every page provides new adventures and new things to learn. As Connie and Bonnie speed past Mars, kids discover why it's red, and how much they would weigh standing on its surface. Fun riddles then challenge your kids to apply their newfound knowledge. And to encourage further exploration, each page suggests activities away from the computer, like using a flashlight and basketball to study eclipses.

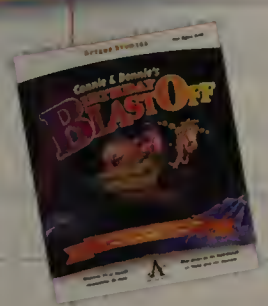
Kids can paint using the fun stamps, colors and backgrounds provided.

More fun than zero gravity.

From connect-the-dots constellations to genuine NASA videos, we have every outer space activity imaginable. And with our "learn as you play" philosophy, they all educate while they entertain. So call 1-800-980-9468 today for your free demo CD.

ACTIVE ARTS

THE SEARCH FOR INTELLIGENT LIFE BEGINS AT HOME.™



One small step by you will help your kids make a giant leap in learning: just call 1-800-980-9468 to order your free demo CD. And then for only $39.95, you'll receive a code to unlock the fully functional software on the CD. www.active-arts.com

Designed for Microsoft® Windows® 95 · Mac® OS · Ages 6 to 10

Offer ends September 1, 1997.

©1997 Active Arts, Inc.

Circle 50 on reader service card

For your free demo call 1-800-980-9468 or mail this coupon to Active Arts, 610 SW Broadway, Ste 500, Portland, OR 97205.

Name:

Address:

City: State: Zip:

Phone: e-mail:

Code MW797

Conflict Catcher 4

TOP START-UP MANAGER GETS BETTER

THE LAST VERSION OF CONFLICT Catcher was so elegantly designed, so utterly intuitive, and so powerful that it seemed impossible to improve upon it (see *Reviews*, September 1995). Amazingly, though, Casady & Greene has done just that. Conflict Catcher 4.01 is more than just another utility; it's a nearly indispensable tool for managing and maintaining the dozens of little system extensions that load every time you start your Mac.

New to version 4 is the ability to manage more than just system extensions. You can also use the program to activate and deactivate plug-ins and extensions associated with other applications, such as Netscape Navigator and QuarkXPress.

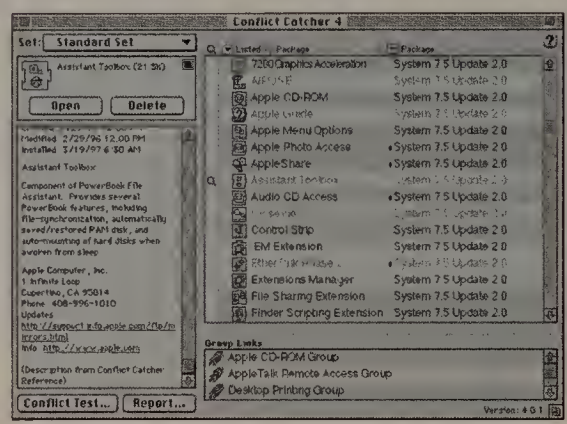
Many of Conflict Catcher 4's (CC4) new features involve built-in Internet links to reference information. A Web menu provides links to Apple; the major Mac publications; and a handful of other genuinely useful Mac troubleshooting Web sites, including Casady & Greene's own online reference library. If you're not sure what a particular extension does—or if you think you need a newer version—you can tap into Casady & Greene's database of Mac extensions, control panels, and plug-ins (more than 2000 entries are cataloged). The reference library contains direct links to other Web sites for the latest product information and updates.

At the heart of Conflict Catcher 4 is its conflict-testing system, which has become even more automated. CC4 offers to begin automatic conflict testing if your machine crashes at start-up, systematically turning extensions and control panels on and off with each restart until it zeros in on the problem components. When you're not hunting down problems, CC4 lets you organize start-up files, grouping them into sets so you can easily enable or disable system components at start-up and load only those you want or need.

One of the best new features is the Compare With Set command, which allows you to compare your current start-up set with any other set defined by Conflict Catcher (see "Compare and Contrast"). Unmatched files are displayed in gray, making it easy to see what distinguishes one configuration set from another—a tremendous troubleshooting tool.

All the program's file-management features have been improved, too. You can customize the font used to display lists of files in your system, and sort files by ten different criteria, including Package—a new option that organizes files logically according to the application or utility they're used with.

As in previous versions of Conflict Catcher, a Detail panel (accessible by clicking in the column to the left of each file listed in the main window) contains extensive information about each file, including its size, version number, RAM requirements, manufacturer, and in many cases a description of the file's function. In version 4, the details also include live links to each software vendor's e-mail address and Web site. The program's thorough documentation even includes a section on troubleshooting problems that *don't* involve system extensions.



Compare and Contrast CC4's Compare With Set command makes it easy to compare two different start-up sets, displaying in gray the files that differ.

Macworld's Buying Advice

Conflict Catcher is the best start-up manager you can buy. Other extension management utilities, such as Now Startup Manager and Apple's Extensions Manager control panel, don't provide as much control over your start-up files or as much insight into the contents of your System Folder. The improvements in version 4 simply make this an even more valuable addition to any troubleshooter's arsenal of tools.—JOSEPH SCHORR

RATING: ★★★★★/9.3 **PROS:** Compares different start-up sets; strong conflict-testing tools; Web links to software vendors; flexible file-sorting and display options. **CONS:** None. **COMPANY:** Casady & Greene (408/484-9228, *http://www.casadyg.com*). **LIST PRICE:** $99.95.

QuicKeys 3.5.2

UPDATE ADDS NATIVE POWERPC SPEED

FOR EFFICIENCY FANS EVERYwhere, the release of CE Software's QuicKeys 3.5.2 is welcome news. To the floating tool bars and revamped interface of QuicKeys 3.5 (see *Reviews*, December 1996), this update adds native PowerPC code, filling a gaping gap in the feature list. The increased speed varies by Mac model; overall, though, the acceleration is small but noticeable, in both executing and editing macros. Even if your Mac isn't PowerPC based, you'll appreciate the bug quashes, including compatibility fixes for Adobe Photoshop and Kensington trackballs. Best of all, this update is free; QuicKeys 3.5 owners can download the updater from CE's Web site.

Despite these improvements, however, this update doesn't advance QuicKeys' overall usefulness. First, version 3.5's weaker features haven't been revisited; you can still create tool bars, but the icons still all look alike, and you still can't give them permanent text labels. And although QuicKeys has always excelled at manipulating menus, dialog boxes, and buttons, exotic interface elements such as tabbed dialog boxes (as in Microsoft Word 6), floating palettes (in Claris products), contextual pop-up menus (in Navigator), and even title bar–sprouting menus (in Photoshop) often thwart QuicKeys. A tech-support rep told me that CE doesn't recommend using QuicKeys to handle even standard pop-up menus.

Macworld's Buying Advice

QuicKeys has more rivals than ever: Westcode's OneClick, Affinity's Tempo II, and Binary's KeyQuencer each outdoes QuicKeys in certain areas. But QuicKeys is still the most direct route to giving your control key and F-keys a purpose. For tasks such as typing your return address, launching programs, or processing Photoshop files, QuicKeys is still a winning, and now faster, software servant.—DAVID POGUE

RATING: ★★★★/8.2 **PROS:** Native PowerPC code at last; bug-fixes; free update. **CONS:** No new features; can't handle some interface elements. **COMPANY:** CE Software (515/224-1995, *http://www.cesoft.com*). **LIST PRICE:** $119.

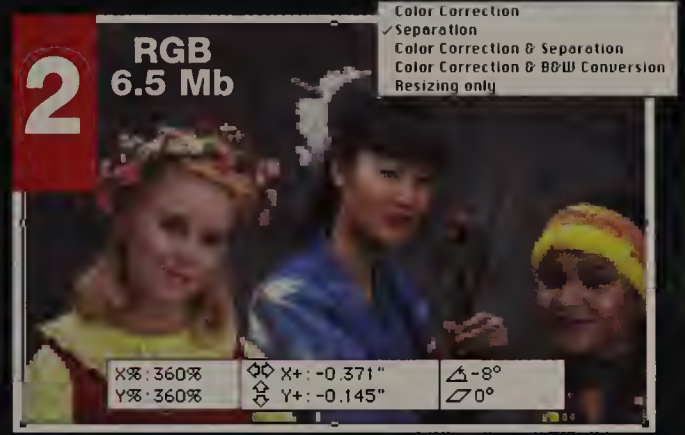
Unbelievable Ease of use

Don't be concerned about the resolution, size, horizontality and color correction and mode. Just import images in the Quark image box from a Photo CD disk or from a raw scan. Position them however you want using QuarkXPress's tools. For each, send orders with the processing options to the IPM.

I import my pictures in my QuarkXPress document's image boxes

TIFF, EPS JPEG or Photo CD ImagePac; RGB, YCC, grayscale or CMYK. This image was scanned from a 35 mm original in RGB raw mode at 100% size on a PowerLook 2000 flatbed scanner at its optical resolution of 1000 dpi.

I position them using the XPress tools and I select processing options using the binuscan Xtension

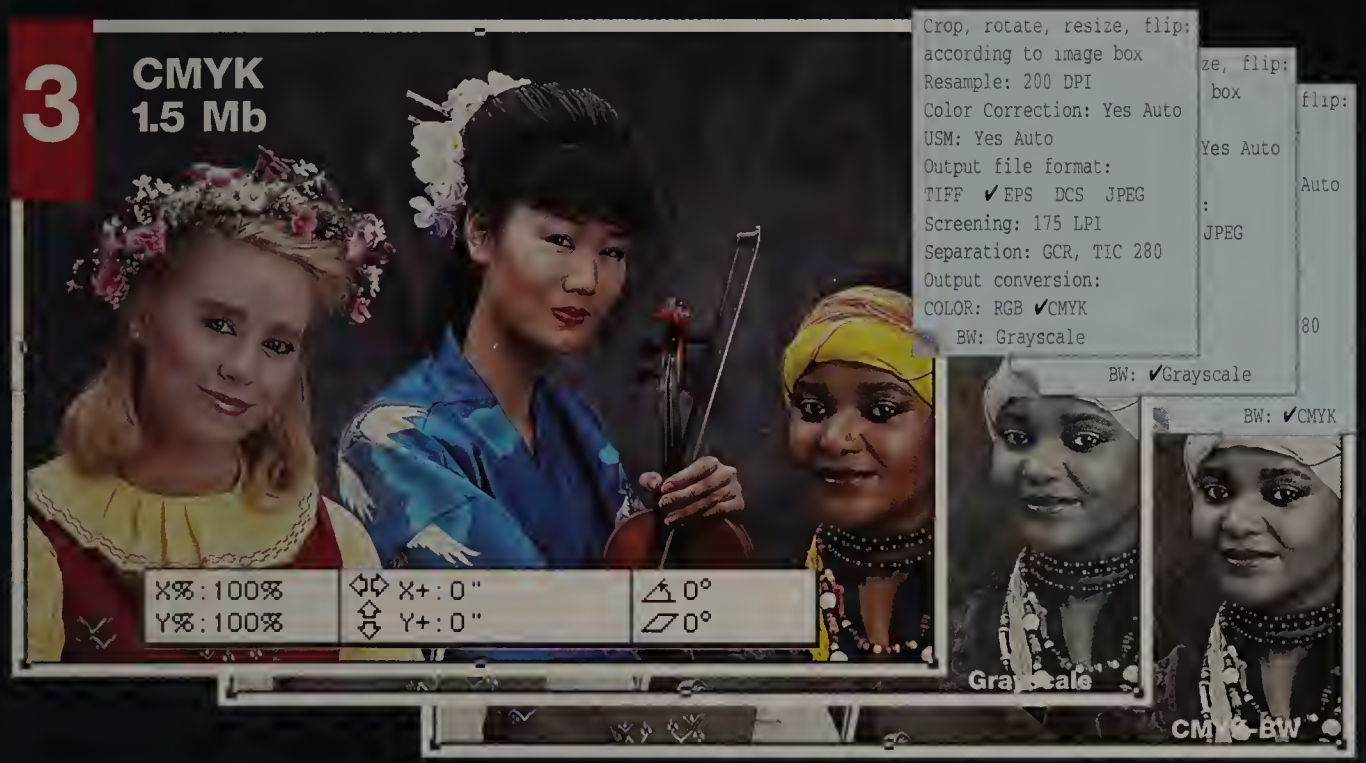


The client XTension writes the "order list" then sends it to the IPM for processing. It includes the values entered in the QuarkXPress "measurement bar" plus the processing and output options set in the XTension's user interface.

Phenomenal Productivity

A catalog with hundreds of images that may require several people a week's worth of work can be processed and ready to output in just a few hours. Processing can take place overnight, even on a low-end desktop computer, with little RAM.

After processing, the new recalculated images are re-imported in the desired color mode with the right amount of pixels... automatically



From a single RGB file, those CMYK, grayscale or CMYK-BW processed images will output at a blazing speed, due to their optimization.

Astonishing Quality

Each processing algorythm uses state-of-the-art technology. Even when the IPM is used only to resize images previously color corrected and separated, the screen preview is recalculated with colors and a sharpness that are truly impressive. No more surprises on the color proof!

See it to believe it !
Call today 800-881-2352
and receive a free demo disk

binuscan Inc.
505 5th Avenue - New York, NY. 10017
Tel: (800) 881-2352 - Fax: (212) 681-0603

On the Internet:
http://www.binuscan.com
e-mail: info@binuscan.com

binuscan® ColorPro

Client/Server Applications
for complete digital image management

Mac OS & Windows 3.11, 95 & NT

THE SERVER APPLICATION

"binuscan IPM®" (Image Processing Machine) works in the background, using the processor only when it's free. It recalculates a new image based on the original and a list of orders generated by a client application. This "order list" contains all the user's output preferences, including (but not limited to) CMYK separation specs, automatic color correction instructions, and sharpening levels, as well as any other modifications made to the image (crop, flip, rotate, resize, etc.) by the client application. binuscan achieves an impressive high and consistent quality every time because the IPM bases its processing algorithms on an individual histogram analysis of every image.

THE CLIENT APPLICATION

Many client applications can be used to generate "order list" text files and save them into the IPM's "TO DO" folder for processing. binuscan's open architecture allows third party developers to write custom client applications. The binuscan ColorPro® package includes the binuscan IPM® plus client applications to acquire images from scanners or Photo CDs and binuscan JobManager® (a Quark XTension) which works as described to the left.

THE PERSONAL TOUCH

binuscan ColorCorrect is a utility included with the IPM which allows you to create ghost effects or "sepia effects" and harmonize the images on your page. This utility will perform color adjustments to processed images by writing PostScript functions to the image file. Modifications are written then updated in your page layout in seconds, no matter how large the files are. Every modification can be reverted with the same ease and in the same manner.

Circle 6 on reader service card

a special version of binuscan is bundled with all **UMAX** high-end scanners and is freely available for every Pro Master Photo CD

binuscan® PhotoPerfect

Quark and QuarkXPress are registered trademarks of Quark, Inc

Your Mac gives you the
power
to communicate anything.
Power Macintosh
9600/200MP

So why is it your parents still don't get what you do for a living?

Ever since the day you first wrapped your fingers around a crayon, you've been driven by the need to create. The way you create, however, has changed beyond recognition. Or at least beyond Mom and Dad's recognition.

Apple® Macintosh® computers have always understood people who create. In the words of *I.D. Magazine,* "The designer-friendly quality that characterizes the Mac is deep in the machine." Now, with our newest Power Macintosh® lineup, it's even deeper.

We understand your need for speed.

The faster your computer, the more time you have to experiment. That's why we created the Power Mac® 9600/200MP with dual PowerPC™ processors. It blows away a PC with dual Pentium® Pro processors running Windows NT.®** In fact, Adobe® Photoshop runs 50% faster on a Power Mac.** Which translates into 50% less time staring at your screen and waiting for your computer to finish retouching photos, manipulating images or applying filters. Valuable time you could be spending actually doing all those things.

We understand your need for flexibility.

Some days you need to add memory. Some days, an expansion card (or three). With a Power Mac 8600 or 9600 you won't need an MIS person, or even a screwdriver to do it. Push a button and they open up simply and gracefully, placing the logic board at your fingertips. So you can do what you need to do and get back to doing what you love.

We understand your need to see how graphics will look in Windows.

Now you don't have to go out and buy a PC just to see how web sites and graphics you've created on a Mac® will look in Windows.® Just add a 166 MHz Pentium PC compatibility card, and your Power Mac can run Windows 95 or Windows 3.1 applications. You can also access a Windows network and exchange files with clients and other less fortunate folks who happen to use Windows.

For an even better understanding of the computers that understand you, visit us at www.powermacintosh.apple.com. Or call us at 800-538-9696 for the name of the Power Mac reseller nearest you. And then, if you haven't lately, call your mother.

www.powermacintosh.apple.com

QX-TOOLS CAN SAVE QUARK USERS A LOT OF EXTRA RUNNING AROUND.

IN THIS AD: *You might think these drop shadows, bevels and glows were done in Photoshop, but we did them right in QuarkXPress. And each one was done with QX-Tools, not by some wimpy, single-effect XTension that costs about the same as everything you get in QX-Tools 2.0.*

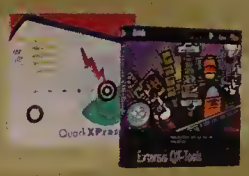
CyberPress converts QuarkXPress documents into HTML format for the WWW. Includes the award-winning Adobe PageMill 2.0. Mac.

PhotoTools' award-winning collection of plug-ins for Photoshop offers complete text control, drop shadows, bevels, glows, and image enhancements! Mac & Win.

Intellihance for Photoshop automatically and intelligently enhances the quality of single or multiple images. Mac & Win.

Fetch organizes your graphics files into an on-line browsable catalog for quick and easy access, regardless of the application used to create them. Mac.

VectorTools' plug-ins for Illustrator and Xtras for FreeHand are an indispensable collection of tools that feature color control, object styles, libraries and more. Mac.



Stay put. Leaving QuarkXPress to add a simple drop shadow isn't exactly quick. But the upgraded Extensis QX-Tools collection of XTensions makes adding things like drop shadows, bevels, embosses and glows in QuarkXPress easy and efficient. So you don't have to drop everything and launch Photoshop just to add an effect.

Being Extensis, we had to add a lot more productivity than that. Now you can do stuff like scale multiple objects; apply character styles; assign objects to layers; find and replace colors and fine tune text, rules and paragraphs in one step. And of course we made all our current award-winning tools better, giving you all kinds of time to play with those cool effects. We saved the best for last. QX-Tools 2.0 has an incredibly low price — only $99.95 with a 60-day risk-free trial period ($49.95 for current users).

Call 1-800-796-9798 to order your copy of QX-Tools 2.0 or download a free trial from http://www.extensis.com. And quit getting the runaround.

GUARANTEED COMPATIBLE Versions 3.31, 3.32 & 4.0 QuarkXPress

Extensis

★★★★★ Publish 1997

MacUser ★★★★½

MACWORLD MW ★★★★

Circle 13 on reader service card

© 1997 Extensis Corporation. All rights reserved. The Extensis logo, VectorTools, PageTools, CyberPress, Fetch, PhotoTools and QX-Tools are trademarks of Extensis Corporation. Intellihance is a trademark of DPA Software. Third-party trademarks are property of their respective holders. Extensis Corporation, 1800 SW First, Suite 500, Portland, OR 97201 • 503-274-2020 • Fax: 503-274-0530. Extensis Europe, Zonnebaan 34, 3606 CB Maarssen, The Netherlands • 011-31-3024-75057

Source 1087

www.extensis.com

ORDER QX-TOOLS (MAC)
ONLY $99.95
800-796-9798

Courier V.Everything 56 K

FAST NEW MODEM IS JUST SLIGHTLY AHEAD OF ITS TIME

WHILE X2 AND K56FLEX TECHnology duke it out over which will reign over the Internet lines, U.S. Robotics' Courier V.Everything 56 K modem is making its way into people's homes. With screamingly fast Internet connections, 56-Kbps modems promise quick downloads at reasonable prices. But look again—this fast new technology may still have some roadblocks ahead.

The key to making x2 connections is finding an Internet service provider (ISP) that supports U.S. Robotics' technology. At press time, only 191 ISPs offer x2 speed in 530 cities. Unfortunately, your current ISP might not be one of them, forcing you to pay long-distance or surplus charges, or find a new service provider.

America Online, for example, makes x2 users jump through two hoops. First, you must download a special x2 ccl script file that plugs into the AOL interface. Then, if you don't reside in one of the five metropolitan areas offering AOL local access, you must dial the nationwide number, for which you're charged a $6-per-hour connect fee.

However, once you make an x2 connection, you'll find noticeable speed improvements over existing 28.8-Kbps or 33.6-Kbps modems. I connected regularly at 44 Kbps, substantially better than 28.8 Kbps. U.S.R.'s tech support claims that line quality and distance from the phone company's central hub may hamper connecting at 56 Kbps. Nonetheless, I downloaded several files and Web pages about 40 percent faster than at 28.8 speeds. Keep in mind that x2 only downloads at faster speeds; for uploads you will still be sending at 33.6 Kbps.

In addition to its speed advantages, the Courier also offers caller ID; remote configuration and diagnostics; call-back dialing security; flash ROM upgradability; and Adaptive Speed Leveling (ASL), which optimizes the modem's speed for the best possible transmissions. AOL and CompuServe disks, as well as Smith Micro Software's popular MacComCenter fax and data software, are also bundled. MacComCenter easily transmits documents by way of the Drag N' Fax icon. However, the disappointing address-book features can't compete with those of more sophisticated packages such as Global Village's GlobalFax software.

It's a little too early to tell where 56-Kbps modem technology will fall. Currently there is no 56-Kbps standard, though the International Telecommunications Union (ITU) will likely standardize requirements by the summer of 1998. Until then, modem manufacturers must decide whether to base their products on U.S. Robotics' x2 or Rockwell and Lucent's k56flex technology. At press time, Global Village planned to ship its x2-based 56-Kbps modem in May. However, a variety of vendors, such as Boca Research and Zoom Telephonics, are basing products on the Rockwell k56flex chip set. Moreover, once the new standard arrives, it's conceivable that all 56-Kbps modems already on the market may require some type of upgrade. This may be as simple as a free downloadable flash ROM upgrade, or it might mean a new chip set.

ARNOLD TIOSEJO

Macworld's Buying Advice

If you're an Internet guru who longs to surf the Web at fast speeds, the Courier V.Everything 56-Kbps modem may be right for you. But first check the Connect Now section of U.S.R.'s Web site for information on ISPs with x2 service in your local area. On the other hand, if you're not ready for setup troubles or the hassle of finding an ISP with x2 access in your city, wait to see in which direction this technology will go.—DEAN ANDREWS

RATING: ★★★/6.8 **PROS:** Fast Internet access; flash ROM upgradable; caller ID; call-back dialing security. **CONS:** Installation can be difficult depending on ISP; hidden costs of dialing ISP outside your local area. **COMPANY:** U.S. Robotics (847/982-5010, *http://www.usr.com*). **LIST PRICE:** $395.

Your parents may not understand what you do for a living. But we know some experts who do.

Apple Authorized Value Added Resellers understand exactly what your business needs. They offer custom-fit Apple®-based solutions for hardware, software, consulting, networking, training and more.

For more information and the VAR nearest you, call 800-538-9696 or visit var.apple.com.

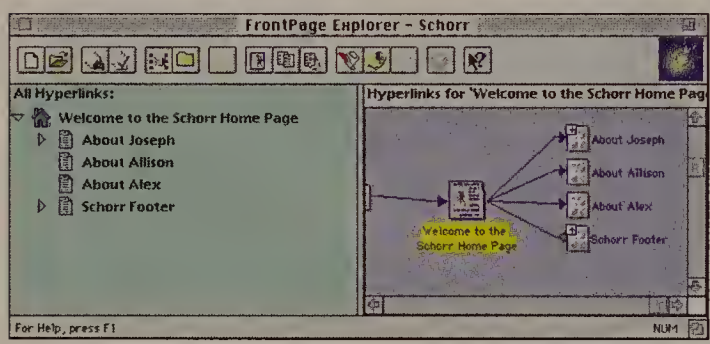
© 1997 Apple Computer, Inc. All rights reserved. Apple and the Apple logo are registered trademarks of Apple Computer, Inc.

FrontPage

BEHEMOTH IS LONG ON WEB-SITE MANAGEMENT, SHORT ON AUTHORING

MICROSOFT'S LONG-AWAITED Web authoring suite is a colossal disappointment. Despite admirable site-management tools and strong support for the latest Web technologies, FrontPage 1.0 is bloated, cumbersome, and poorly integrated with other programs.

It's too bad FrontPage's editing tools aren't more streamlined, because its site-based approach to Web authoring is otherwise outstanding. Unlike simpler Web authoring programs such as Adobe PageMill, FrontPage treats your site as a single entity. FrontPage Explorer—one of the program's two main components—gives you an overview of your site, displaying pages and the links between them hierarchically. Explorer lets you search and replace across your site and maintain a list of pages to be completed, then publish your site via FTP.



Go Exploring FrontPage thinks in terms of Web sites, not just Web pages. The Explorer window, for example, shows you how your pages are hyperlinked.

The suite's other main component, FrontPage Editor, is a WYSIWYG page-editing environment that borrows heavily from Microsoft Word's overblown interface—and it's here that FrontPage falls down on the job. Although Microsoft touts FrontPage as closely integrated with Microsoft Office, Editor's integration with those programs is appalling. For example, FrontPage doesn't recognize Word documents when you use the Open command; you have to change the file type in the dialog box to All Files, then step through another confusing dialog box. In contrast, PageMill opens Word files cleanly, no questions asked.

The program's drag-and-drop support is also weak. You can't drag images or text into or out of FrontPage, nor can you drop file icons onto a page to create links to other documents as you can in PageMill. And setting up frames in FrontPage is needlessly complex, despite a wizard that steps you through the process.

FrontPage Editor's basic formatting tools, on the other hand, are simple and word processor–like, as are its table-formatting controls. When you enter a string of text that FrontPage recognizes as a URL or e-mail address, the program automatically turns it into an active link. It converts images to GIFs and JPEGs automatically and includes simple tools for creating image maps. Tool bars make it easy to add sounds, movies, ActiveX controls, JavaScript, and Java. Other buttons give you access to FrontPage's WebBots—dynamic objects that add tables of contents, sitewide text searching, forms handling, and other features to your site (though the more powerful WebBots require a Windows NT or Unix Web server running FrontPage extensions).

FrontPage lets you view and edit the HTML code behind your pages, but the tools for doing so are minimal. You can't drag and drop text in the HTML window, for example, and you have no control over the fonts and colors used to display the code. You can't even copy selected text within the window.

Requiring 30MB of hard-disk space and at least 13MB of free RAM, FrontPage is huge and sluggish. For acceptable performance, you need a Power Mac running at 100MHz or higher.

Macworld's Buying Advice

FrontPage introduces some good site-level authoring tools that outshine the competition's, but that doesn't make up for its complex dialog boxes and unwieldy interface. PageMill may still need refinement, but it's a far more elegant way to create Web pages.—JOSEPH SCHORR

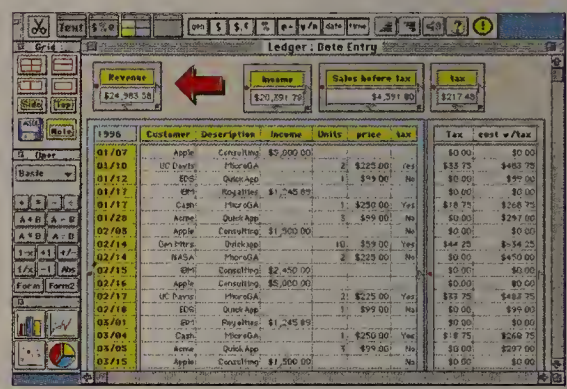
RATING: ★★/4.8 **PROS:** Good site-management and formatting tools; automatically activates embedded URLs. **CONS:** Slow, bloated interface; poor integration with other programs; weak drag-and-drop support; unintuitive frames setup. **COMPANY:** Microsoft (206/882-8080, *http://www.microsoft.com*). **LIST PRICE:** $149.

Spreadsheet 2000

LKISS SUCCESSOR READY FOR BUSINESS

SPREADSHEET 2000 2.01'S PREDECESOR—the awkwardly named Let's Keep It Simple Spreadsheet (LKISS)—offered a unique visual interface with a drag-and-drop method for assembling calculations from grid elements and palettes of operators, and a useful but limited assortment of templates (see *Reviews*, September 1996).

Early LKISS users were attracted by the program's ease of use, especially in contrast to the daunting bulk and feature set of Microsoft Excel 5. However, those users had a stronger business focus than the original product delivered, and they wanted more canned programming done up front. Spreadsheet 2000's serious name hints at its new direction, complete with business-oriented functions and templates (see "Taking Care of Business").



Taking Care of Business Along with some tool enhancements, Spreadsheet 2000 includes popular business templates, such as this basic ledger.

The new, larger spreadsheet (which now requires 8MB of RAM) sports remodeled main icon bars and palette sets, with several new quick number-formatting buttons—including date and time, and a calculation-status traffic light—and additional basic operations for time calculations and database operations. The database functions are an important improvement; Spreadsheet 2000 is now the easiest available method for creating the flat-file databases that are well suited to spreadsheets.

Spreadsheet 2000's new business templates include a budget, a business plan, additional expense reports and invoices, time cards, and planning documents. (For nonoffice users, Spreadsheet 2000 offers new home and educational templates, too.) What makes the expanded set of templates most useful is that you can

modify them with a few basic mouse actions. Spreadsheet grids for data entry can simply be dragged to larger sizes—there's none of the tedious insert, rename, and delete activities associated with modifying a traditional spreadsheet.

Once you're accustomed to Spreadsheet 2000's unique style—an expanded tutorial makes this easier—you'll find that modifying a home mortgage spreadsheet into an auto-loan calculator (or even a credit card–payment planner or an annuity forecaster) is a matter of a few minutes' worth of dragging and dropping. Spreadsheet 2000 takes a few seconds longer to start up than LKISS did, but recalculations on modest-size spreadsheets are still virtually instantaneous—quite an achievement in such an elaborate interface.

Unfortunately, Spreadsheet 2000 is at a distinct disadvantage in a market almost totally dominated by Excel. For those accustomed to a traditional way of working, Spreadsheet 2000 requires a change of mind-set to understand its advantages. A more concrete dilemma is that Spreadsheet 2000 can export only tables of inputs and results—rather than detailed calculations—to other spreadsheets. Another Spreadsheet 2000 drawback is common to all visual programming systems: complex problems can lead to nearly unreadable "connection diagrams" mapping the calculations.

Spreadsheet 2000's near-$100 price is attractive enough, but Casady & Greene will sweeten the deal for users of Excel, ClarisWorks, or Microsoft Works with a $49.95 competitive upgrade price; and for users of LKISS with a $39.95 price.

Macworld's Buying Advice

Spreadsheet 2000 makes it simple to set up spreadsheets for common business situations, but it also makes some of that work unnecessary by providing a starter kit of templates sufficient for the basics of most small-business operations. Its unique interface makes this LKISS successor a true Mac original, and a program well worth trying.—CHARLES SEITER

RATING: ★★★★/7.8 **PROS:** Friendly interface; great set of basic tools and templates. **CONS:** Visual programming not as effective on complex programs; can't export detailed calculations. **COMPANY:** Casady & Greene (408/484-9228, *http://www.casadyg.com*). **LIST PRICE:** $110.

MessagePad 2000

A THOUSAND DOLLARS? ARE YOU NUTS?

AS THE WORLD WAS FALLING in love with svelte, limited-function PDAs (embodied in U.S. Robotics' palm-size Pilot), Apple was in the back room feeding the Newton MessagePad steroids. The MessagePad 2000, as a result, is bigger, faster, and expensive. Apple's latest Newton solves many of the problems of its predecessors, but this may be the first PDA you have to take out a bank loan to buy.

The first thing you notice about the MessagePad 2000 is that it's slightly longer and wider than the MessagePad 130, in order to accommodate its new

KEVIN CANDLAND

backlit 480-by-320-pixel screen. Those pixels are also smaller and smarter at 100 per inch (compared with the MP 130's 72 ppi), each supporting 16 levels of gray. The finer resolution and larger screen area translate to a dramatic improvement in usable screen real estate. You can see more text and have more windows open. But even I couldn't comfortably wrap my fairly long fingers around the larger-size MP 2000.

The larger case houses other changes—some good, some bad. Telecommuters weary of swapping modem and memory cards will like the MP 2000's dual PC Card slots. And while bigger doesn't usually mean faster, the MP 2000 comes with a 160MHz StrongARM chip. For the first time, you can actually characterize MessagePad system performance as responsive. Finally, in the "Tiny but Nifty" category, a small stylus holder pops out of the top of the MP 2000's case the way a drink holder slides out of a car's dashboard. However, Apple has ditched the standard serial-port connector in favor of the new Newton InterConnect port, which requires you to use an adapter plug (about the size of a pair of Monopoly dice) when you use the Newton keyboard or connect to your desktop machine. The last thing I need is another tiny bit of plastic to keep track of.

Beyond the familiar Notes, Dates, and People software built into the Newton OS, the MessagePad 2000 comes bundled with three new applications: an e-mail client (EnRoute), a Web browser (NetHopper), and a word processor–and-spreadsheet application (QuickFigure Works). All three are solid, useful applications. EnRoute is tightly integrated with the Newton OS, from which it draws the information it needs to send and retrieve your Internet mail. EnRoute also relies on the Newton's People application for e-mail addressing. EnRoute feels less like an application than like an extension of the operating system. Completing the Internet connection, NetHopper brings the World Wide Web to the MessagePad 2000 amazingly well, especially considering the graphics-and-design-happy approach of so many Web sites. QuickFigure Works makes (at last!) a well-appointed spreadsheet a basic part of the MessagePad's repertoire, and the spelling checker built into the word processor part of the application is an added bonus for many users; QuickFigure Works adds $50 to the price of a basic MessagePad 2000.

Macworld's Buying Advice

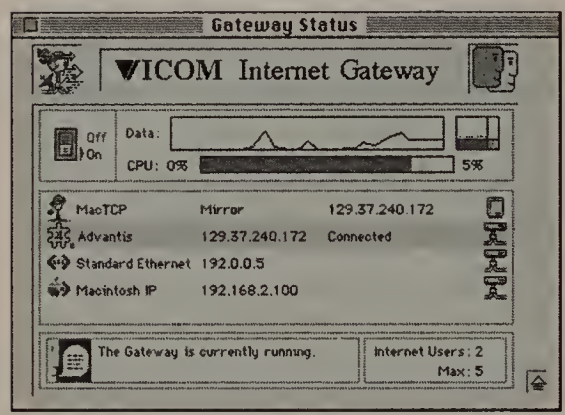
For $1099, you get a MessagePad 2000, a keyboard, a carrying case, and assorted cables and software. The Newton OS is cool, but for exactly the same price you can buy a Pentium laptop running Windows with a color screen, 8MB of RAM, and a 700MB hard drive. If you just want handheld names and addresses, get the U.S. Robotics Pilot for under $400. Apple has finally made the MessagePad a useful device, but the company's also priced it out of the realm of sanity.—CAMERON CROTTY

RATING: ★★★/5.0 **PROS:** High-speed CPU; high-quality display; robust software. **CONS:** Unbelievably expensive. **COMPANY:** Apple Computer (408/996-1010, *http://www.newton.apple.com*). **LIST PRICE:** $949; with QuickFigure Works $999; with Works, keyboard, and case $1099.

Internet Gateway 3.7

NETWORK ROUTER SOFTWARE OFFERS SPEEDY INTERNET CONNECTIONS

CONNECTING ONE COMPUTER to the Internet can be difficult enough; connecting an entire local area network is another matter entirely. Vicom's Internet Gateway 3.7.3 simplifies this onerous process, letting network administrators connect computers on a LAN to the Internet using a single PPP or SLIP account, a modem, and a phone line. This idea isn't new—you could also buy a dedicated hardware gateway, and most Unix machines offer similar software routing—but Internet Gateway is the first product that turns a Macintosh into an inexpensive gateway and packet router.



Tracking the Packets Internet Gateway's status window displays a graph of TCP/IP activity and CPU usage, along with a list of currently connected users.

Setup is simple. Internet Gateway comes configured for three, five, or ten concurrent users; the program's Setup Wizard scans your system and recommends the optimal configuration. The user interface is equally uncomplicated, though I did encounter one bug: whenever I made changes in the PPP Setup dialog box, I double-checked it and often found the previous values still there.

Once Internet Gateway is configured, setting up the other computers on your network is a snap as long as they're running MacTCP or Open Transport on either Ethernet or LocalTalk. You can assign IP addresses to each computer or let the program's Dynamic Host Configuration Protocol server configure each client automatically when the user starts TCP/IP operations on the network. When Internet Gateway detects network activity, it dials out to your Internet service provider and connects to it. You can configure it to connect to the Internet only when needed and to hang up after a specified period of inactivity.

My small office tested the five-user gateway using a variety of software titles on two older Macs, two Power Macs, a PC, and a NextStation (Internet Gateway is based on the platform-agnostic TCP/IP) and encountered no problems other than that the older Macs were unable to run other software in the background. Two or three users can connect over the same 28.8-Kbps connection without any noticeable slowdown; it's only when someone engages in an intensive task, such as a long FTP download, that the connection begins to bog down.

While Internet Gateway gives you access to the Internet, it can also give outsiders access to your LAN—but only if you let them. The program is preconfigured to block outside TCP/IP packets, but you can also specify the packets you'll allow and to which client machines they can be routed. These controls let you filter packets based on IP address (to block access to a particular machine) or port (to block access to an entire protocol, such as HTTP). That's a powerful feature, particularly for schools that want to block access to certain Web sites.

Macworld's Buying Advice

Internet Gateway is currently the easiest way to connect a LAN to the Internet. It offers excellent performance and unparalleled ease of use compared with a Unix-based software router, but at about $80 per user it's not cheap—a dedicated hardware router such as Whistle's InterJet (see *Reviews*, June 1997) might be a better alternative to the ten-user license. And if you can get by with a two-user license, consider Vicom's SurfDoubler; it offers the same performance and security features for only $149.—ROB TERRELL

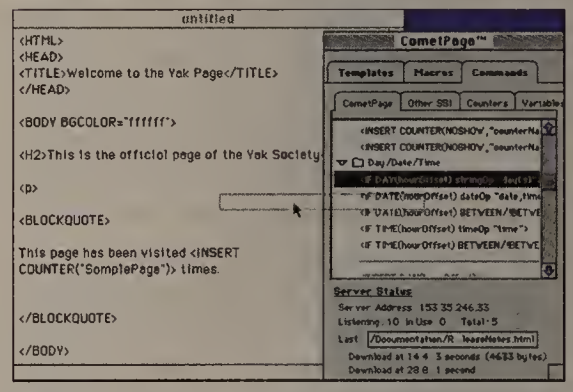
RATING: ★★★★/7.5 **PROS:** Simple to configure; good performance; excellent security features. **CONS:** Lower-end computers can't run anything else in the background; can cost nearly as much as a hardware router. **COMPANY:** Vicom Technology (415/691-9520, *http://www.vicomtech.com*). **LIST PRICE:** Three-user pack $249; five-user pack $399; ten-user pack $750.

CometPage

TEMPLATES AND MACROS FOR CREATING DYNAMIC WEB SITES

BUILDING DYNAMIC WEB PAGES—those whose content changes depending on the day of the week, or that redirect visitors to different URLs depending on the time of day—ordinarily takes some heavy-duty programming. CometPage 1.0.5 lets you add dynamic elements simply by dropping ready-to-use HTML tags onto your Web pages. But the manual's caution that an "intimate knowledge" of HTML is required isn't an overstatement: if you're squeamish about editing HTML code, you won't like CometPage.

Unlike stand-alone Web editors, CometPage works in conjunction with drag-and-drop–aware authoring programs such as Bare Bones' BBEdit and Adobe PageMill. To add predefined HTML commands, macros, and templates to your pages, you simply drag them from the CometPage window into your Web editing program. Dragging and dropping pages back onto the CometPage window loads them into your browser so you can preview the results immediately (see "Drop Everything").



Drop Everything You can add templates, macros, and dynamic HTML commands to your Web pages by dragging and dropping them from the CometPage window into your Web editor.

In CometPage, templates are simply chunks of frequently used HTML text that you save and store in the program's folder. More powerful are the macros, which can contain text, HTML tags, Java code, and any other elements you plan to use throughout your site. When you drag a macro onto a Web page, CometPage simply inserts a reference to the original macro (rather than its contents); to update the material, you just edit the contents of

continues

Nothing comes closer to reality.

"Best picture quality." "Best legibility." "Best image sharpness." Hitachi monitors are taking top honors in the performance tests that matter the most in review after review.

They've also been singled out as the best value in top-end, performance monitors — "a steal" as Macworld put it.

So if you want a monitor that your eyes can appreciate as much as your wallet, your choice is simple. Hitachi. Call for the full story and your nearest retailer. 800 441-4832.

	SuperScan MC 801HR	SuperScan Mc 801	SuperScan Mc 20	SuperScan Mc 611	SuperScan Mc 600
CRT size	21 inch	21 inch	20 inch	17 inch	17 inch
Viewable image	20.0"	20.0"	18.7"	15.9"	15.9"
Dot pitch	.22 mm horizontal .16 mm vertical		.28 mm	.22 mm (h) .16 mm (v)	.28 mm
Max. resolution	1600 x 1200	1600 x 1200	1600 x 1200	1600 x 1200	1360 x 1024
Scan frequency	31-96 KHz 50-160 Hz	31-89 KHz 50-160 Hz	30-82 KHz 50-120 Hz	31-92 KHz 50-120 Hz	30-64 KHz 47-104 Hz
MSRP	$ 2,199	$ 1,999	$ 1,599	$ 949	$ 799

Macworld STAR Rating ★★★★ 7.4
January 97
Hitachi CM2011

MacUser RATED
December 96
Hitachi CM1711

MW EDITORS' CHOICE
February 96
Hitachi CM2110

MacUser RATED
September 96
Hitachi CM2110

MW ★★★★
February 96
Hitachi CM2110

MPR II

3-year warranty

Colorific

SuperScan®
An advantage you can clearly see

NSA 100 Lowder Brook Drive, Westwood, MA 02090
Tel: 800 441-4832 Faxback: 800 555-8552
http://www.nsa-hitachi.com The ENERGYSTAR™ emblem does not represent EPA endorsement of any product or service

RasterOps®

HITACHI

Club Mac	DTP Direct	Express Direct	Mac Connection	Mac Mall	Mac Warehouse	Mac Zone	PrePress Direct
800 258-2622	800 643-3328	800 290-4637	800 800-1111	800 222-2808	800-255-6227	800 248-0800	800 443-6600

Circle 74 on reader service card

the original macro, and CometPage updates the references to it automatically.

But it's CometPage's commands that make your Web pages dynamic. These 75 custom HTML tags, which can be dragged onto a page just as templates and macros can, let you insert elements that are automatically updated every time that page is accessed. For example, you can use commands to embed the current date or time into a page, request a password, or generate a random number on the fly.

Although CometPage's commands are powerful, learning how to use them can be tricky. After you drop the basic command strings into your pages, you have to customize them by manipulating the code—hence the need to be comfortable using HTML—being careful to follow the syntax of CometPage's command language. You can turn to the balloon help for guidance, but the electronic-only documentation is oddly incomplete, with sketchy explanations and ambiguous examples.

The interface is somewhat quirky and un-Mac-like, and the program's lack of refinement is evident in the way it handles preferences—they're set in a separate text file, which you have to edit line by line. (Digital Comet says a future version of CometPage will correct the problem.)

CometPage's commands and macros require CometSite, a separate ($149) CGI that runs on a Web server. CometSite's job is to interpret CometPage's macros and commands and generate the HTML as each page is served. Although you *can* get around that requirement, none of the CometPage commands that require on-the-fly processing will function on the published site, defeating much of CometPage's usefulness.

Macworld's Buying Advice

If you're comfortable hacking your way through raw HTML, CometPage—despite its interface flaws—does indeed simplify the process of adding dynamic content to a Web site. Paired with CometSite, it's a powerful tool for dynamic Web-site management.—JOSEPH SCHORR

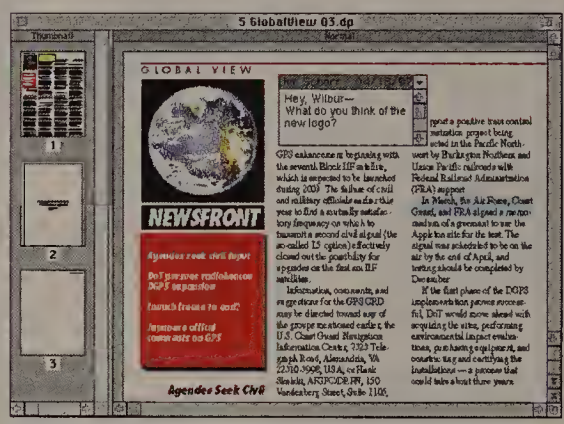
RATING: ★★★/5.1 **PROS:** Good library of dynamic HTML tags; works with any Web editor; good balloon help. **CONS:** Quirky interface; no printed documentation. **COMPANY:** Digital Comet (415/331-5551, *http://www.digitalcomet.com*). **LIST PRICE:** $149.

Common Ground 3.0

PORTABLE-DOCUMENT PROGRAM CAN'T MATCH ADOBE ACROBAT

THE PROGRAM THAT PIONEERED cross-platform portable-document creation four years ago has unquestionably fallen behind its chief competitor, Adobe Acrobat. In spite of some powerful new Web publishing features, Common Ground 3.0.1 not only lacks Acrobat 3.0's forms-handling and interactivity features (see *Reviews*, April 1997), it's also riddled with bugs and interface problems.

Like Acrobat, Common Ground lets you turn virtually any file into a portable document—one that can be opened and read on any Mac or Windows PC, regardless of the applications and fonts installed. Reading the portable documents—called DigitalPaper (DP) files—requires either the full-featured CG ProViewer included in the Common Ground package or the scaled-down CG MiniViewer (the Common Ground equivalent of Acrobat Reader), which can be distributed freely or embedded in DP documents.



Sticky Situation Common Ground's ProViewer lets you annotate portable documents by adding highlights and sticky notes, but the tools are clumsy.

To turn a document into a DP file, you just select the Common Ground printer driver in the Chooser and "print" the file as you normally would. In the ProViewer, you can open, search, and annotate the DP file; this is where you build a table of contents, add bookmarks, insert sticky notes, highlight text, set security options, and embed URLs that link directly to Web sites or to other DP documents.

Unfortunately, some of the ProViewer's tools don't work properly. The Highlighter tool tends to black out lines rather than highlighting them and refuses to recognize multiple columns of text; it's impossible to highlight a paragraph of text in one column without selecting text in an adjacent column along with it.

Even bigger problems emerge when you use the no-frills MiniViewer. Due to an acknowledged bug, the MiniViewer can't display the sticky notes or highlights added in the ProViewer, making such annotations useless. Even worse, it lacks a Find command—a serious oversight. Without basic text-search capabilities, the MiniViewer is a much less useful tool than the Acrobat Reader.

Common Ground does offer text-search capabilities, but only in the ProViewer; for more robust searches, you can use CG Search (another application in the Common Ground package). Although this is a useful tool for creating searchable archives, and the search operators are powerful, the query language required to use it is convoluted and unintuitive.

On the positive side, the new Internet-related features are welcome additions. Being able to embed URLs directly into DP documents makes it easier to integrate those documents into a Web site. And the MiniViewer now can be configured as a helper application in your Web browser, so opening and viewing DP documents over the Web is easier. Unfortunately, some of the more powerful features—such as the ability to create links in Web pages that open directly to specific pages in DP documents—require the $1495 Common Ground Web Publishing System.

Macworld's Buying Advice

Common Ground's cross-platform support is appealing, but the anemic MiniViewer and general bugginess of the software—along with an unacceptably slow 680X0 version—are too problematic to ignore. Acrobat may not be perfect, but it's unquestionably a better tool for creating and distributing portable documents over the Internet.—JOSEPH SCHORR

RATING: ★★/3.8 **PROS:** Good cross-platform support; strong document-security features; supports embedded URLs for Web publishing. **CONS:** Woefully buggy; no Find command in MiniViewer; poor handling of multicolumn text; very slow 680X0 performance. **COMPANY:** Hummingbird Communications (415/917-7300, *http://www.hummingbird.com*). **LIST PRICE:** $195.

macintosh

mac/os

windows

microsoft office 97

where can't you go today?

Way to go Microsoft! Office 97 is packed with hot new features that make it number one. But those same features make Office 97 file formats completely unreadable by any Macintosh software. Period. So how do you go between your Mac and Word or Excel 97 files?

MacLinkPlus will get you there.

Just rely on new **MacLinkPlus 9.7** to take care of your Office 97 file conversion needs. Loaded with hundreds of translation possibilities, **MacLinkPlus** is the only choice for converting popular PC-based word processing, graphics and spreadsheet files for use on your Mac. Or vice versa. With just a point and click or a drag and drop. That's why Apple bundles **MacLinkPlus** with every Mac OS they sell. And why you should find out about upgrading to version 9.7 today.

Circle 79 on reader service card

MacLink

DATAVIZ®

All product names are trademarks of their respective holders.

MacLinkPlus 9.7 lets you read and write Office 97 files on your Mac. Upgrade today.

For details, call 1.800.270.0030 ext.131 or visit our web site at http://www.dataviz.com/YouCanGo

Get a cool deal on our hot Internet utility Web Buddy when you upgrade now.

Buy smart with Editors' Choice.

Macworld EDITORS' CHOICE ★★★★★

To buy smart when choosing Macintosh hardware or software, you need an expert's opinion. Fortunately, the experts at Macworld are more than willing to give you theirs. Just leaf through the pages of this issue — or any issue of Macworld. Wherever you see Editors' Choice, you can be sure the product has passed the most rigorous tests for performance and quality in its class. And comes out a winner.

Our reviewers scrutinize just about every Mac product that hits the market. If it wins us over, you can't go wrong.

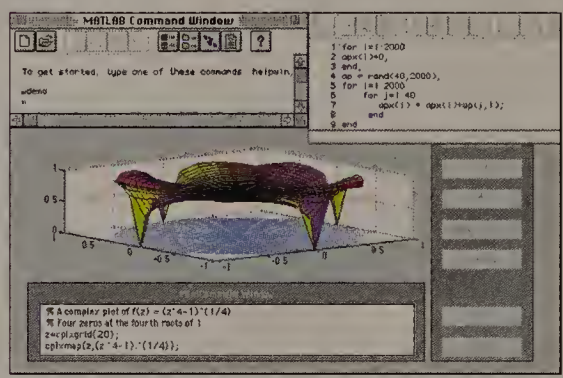
Macworld
THE ESSENTIAL MACINTOSH® RESOURCE

MATLAB 5

ENGINEERING CHAMP BRANCHES OUT

THREE PROGRAMS HAVE LONG dominated math on the Mac: The MathWorks' MATLAB, Wolfram Research's Mathematica, and Waterloo Maple's Maple. Although all three have evolved over the last decade to include science and engineering as well as mathematics, differing origins and customer bases make each a more natural environment for certain topics.

MATLAB, for example, excels at electrical engineering, matrix problems, and systems simulation. It also features the richest toolboxes for statistics and dynamics (though it leaves symbolic computation to an add-on toolbox licensed from Waterloo Maple). The latest version not only updates the program's language features to make it a true multiplatform application-creation environment, but also brings its graphic output up to the high standard set by Mathematica. Mathematica retains its edge in "applied symbolics"—topics ranging from theoretical physics to econometrics—and Maple is still the choice for solving very large-scale symbolic or applied problems on limited hardware. But MATLAB 5, although it's big, executes most calculations quickly and is still the easiest to use.



Words and Pictures MATLAB's new graphics constructs let you draw complex visualizations by using a few brief commands.

One of MATLAB's strengths is its two-level approach to application development: it offers both an internal compiler for fast execution of MATLAB's native M-files, and tools for exporting MATLAB programs into compilable C code. The programming language is seriously improved and modernized—in other words, made to resemble C/C++. It offers new data types, new character-handling methods, a case/switch statement (at last), a nifty editor upgrade that color-codes command keywords, and improved debugging and profiling.

As a result, MATLAB's compiler software can translate programs developed in MATLAB 5 into code for current C compilers without errors or extra fixes. Unfortunately, the language tightening that made this easy translation possible also means that version 5 won't accept many of the sloppy constructions—such as introducing an array variable for the first time inside a loop—that MATLAB 4's interpreter could handle without a glitch.

The new graphics details include 3-D versions of standard constructs; meshes; contours; zoom, shading, lighting, and rotation capabilities; and special print commands for accurate output. Along with version 5's language enhancements, these new features make MATLAB a good substitute for C for everyday math and engineering programming—the run-debug-modify-retest cycle is an order of magnitude faster than in a traditional language. And once everything is debugged and running as a MATLAB M-file, you can export it to C code for Macintosh Programmer's Workshop or Metrowerks' CodeWarrior use with a single command and no additional tinkering.

The MathWorks has updated several task-specific toolboxes to take advantage of the new features of version 5: Simulink (for mechanical and electrical engineering systems simulation), Image Processing, Control System, Signal Processing, and Optimization have all been upgraded to version 2.0. They're not cheap, but neither are they mandatory; older toolbox versions still work with MATLAB 5.

Macworld's Buying Advice

MATLAB has evolved into the program of choice for a wide range of mainly numerical tasks in science and engineering. Its new programming and graphics features make MATLAB 5 competitive with Mathematica in fancy graphics options, and it's still the fastest route to solutions in industrial math.—CHARLES SEITER

RATING: ★★★★/8.1 **PROS:** Definitive tool for electrical and mechanical engineers. **CONS:** M-files created in version 4 may need to be cleaned up. **COMPANY:** The MathWorks (508/647-7000, *http://www.mathworks.com*). **LIST PRICE:** $1795.

50,000 IMAGES

The Image Collection
Order Royalty Free CD-ROMS
Search and Purchase
Order photodisc.com/selects/1

Resolution:
Low
High

New photodisc.com/selects™/1 book: highlights from our online image collection, $19.95. To order, or for a free catalog, go online or call 1 800 528 3472.

Download Image

Download any image. Anytime. www.photodisc.com

PHOTODISC™

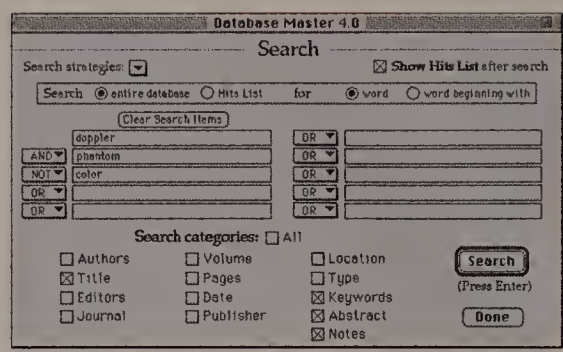
Bookends Plus 4.0

REFERENCE MANAGER ADDS POWERFUL WEB FUNCTIONS

BOOKENDS PLUS 4.0 COMBINES two reference-management tools from Westing Software: Bookends Pro and Bookends Web (see *Reviews*, March 1995 and December 1996, respectively). With Bookends Plus, you can compile a library of citations that can be copied into a word processing document or published on the Internet.

Each Bookends database record contains 13 specialized fields for storing citations. You can enter references manually, or import them using one of several predefined formats. (You can even customize your own import templates.) The size of the database is limited only by disk space, although you may find it more convenient to store unrelated citations in separate files.

Bookends Plus provides two different search functions—simple and Boolean—that let you cull references from a database. Citations that meet your search criteria appear in a scrolling window called the Hits List. To insert references in a manuscript, you select one or more citations from the list and click on a button, bringing your word processor to the foreground. (If you're running a scriptable application such as Microsoft Word 6, the selected references are copied automatically; otherwise you have to paste them manually.)



Search Mode A search function lets you find references that meet several criteria, and you can save searches for later use.

When you're done, Bookends Plus scans the document for embedded citations and reformats them to conform to a specified publication style. Unfortunately, Bookends Plus reads only native WordPerfect files; with any other word processor, you have to save your document in RTF (interchange) format first. And Bookends Plus makes you save the finished bibliography in a separate file, instead of appending it to your document automatically.

Bookends Plus sports an eclectic interface that makes navigating windows and dialog boxes more cumbersome than it ought to be. To get the most out of Bookends Plus, you may need to keep the electronic manual open on your desktop, especially while you're learning to use the program.

On the positive side, Bookends Plus offers unique capabilities for publishing bibliographies on the Internet. If you want to include a formatted list of references on a Web page, Bookends Plus does all the HTML coding for you. There's even an option that lets others search or add references to your database over the Web if you're running a Mac-based Web server.

Macworld's Buying Advice If you want to create written documents with embedded citations, Niles & Associates' EndNote Plus 2.0 (*Reviews*, April 1995) offers seamless integration with more word processors than Bookends Plus, albeit at a higher cost. But if you need to publish interactive bibliographies on the Web, Bookends Plus 4.0 is an excellent value.—FRANKLIN TESSLER

RATING: ★★★/5.8 **PROS:** Inexpensive; Web publishing tools. **CONS:** Doesn't read most native word processor files; stores bibliographies separately. **COMPANY:** Westing Software (415/945-3870, *http://www.westinginc.com*). **LIST PRICE:** $129.

New! DiskExpress Pro now accelerated for Power Mac and much more!

DOUBLE YOUR DISK SPEED!

Alsoft DiskExpress Pro

*Without optimization, your disk performance slows to a crawl. Basic optimization may restore some of your disk's original performance. Only **DiskExpress Pro** can double your disk speed by providing faster access to the files you actually use!*

	DiskExpress Pro 3.0	Norton Speed Disk 3.2
Makes your Mac faster than new by monitoring actual file usage?	YES	NO
Groups frequently used files together for optimum speed?	YES	NO
Allows you to schedule or immediately perform a complete optimization of all disks without having to restart your Mac?	YES	NO
Verifies accuracy of read and write activity to ensure data safety during optimization?	YES	NO
Optimizes the busiest of AppleShare™ and File Share™ servers without interrupting productivity or taking the server off-line?	YES	NO

Twelfth Anniversary

© 1997 Alsoft, Inc. P. O. Box
of Alsoft, Inc. Other product

Sales.Info@AlsoftInc.com ALSOFT 800-ALSOFT1

Circle 140 on reader service card

Just When You Thought It Couldn't Get Any Better...

Adobe PostScript

XANTÉ's PlateMaker II has a new "NEIT" feature.

The PlateMaker II has everything that you've been looking for in a multifunctional output device. With XANTÉ®'s new patent pending Negative Enhanced Imaging Technology, or NEIT, you can now print clear, crisp, high resolution negatives and positives on plain paper or film from the same device. Nothing like it has ever been available before!
The PlateMaker II saves you both time and money on all your pre-press needs whether it be printing, proofing, camera-ready output, direct-to-film processing, or direct-to-plate printing.

XANTÉ's PlateMaker II - the best just got better.

PlateMaker-II

Your Complete Pre-Press Solution

For more information about XANTÉ's PlateMaker II and FilmStar call:

800-926-8839

Ext. 2136 • Dealers Call Ext. 2137

Fax 334-342-3345

http://www.xante.com

FilmStar™

From computer to PlateMaker II to film, XANTÉ's FilmStar offers you the fastest way to process high-quality film from your desktop.

No Camera. No Darkroom. No Hazardous Chemicals.

Optional on-site service provided by XANTÉ in partnership with Olivetti North America.

olivetti

AT&T Capital Corporation

XANTÉ *Innovations In Output*

© 1997 XANTÉ CORPORATION. XANTÉ, Accel-a-Writer, and X•ACT are trademarks or registered trademarks of XANTÉ CORPORATION. Adobe, PostScript, and the PostScript logo are trademarks of Adobe Systems Incorporated or its subsidiaries and may be registered in certain jurisdictions. Other brands and product names are trademarks or registered trademarks of their respective holders. XANTÉ CORPORATION, 4621 Spring Hill Ave., Mobile, AL 36608, P.O. Box 16526, Mobile, AL 36616-0526, Phone: (334) 342-4840, Fax: (334) 342-3345.

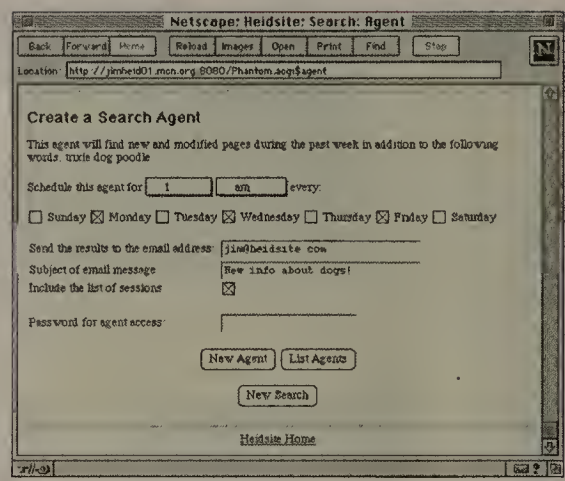
Circle 112 on reader service card

Phantom 2.0

WEB CRAWLER LETS YOU BUILD YOUR OWN SEARCH PAGES

HOW DO SEARCH SITES SUCH AS AltaVista keep track of all the pages on the World Wide Web? No, not by employing Web-addicted elves to surf 24 hours a day. Search sites use *crawlers* (also called *robots* and *spiders*), automated programs that traverse the Web and compile a database along the way. But Web crawling isn't limited to systems like AltaVista's, which is built around a bank of workstations containing about a dozen 64-bit RISC processors, 10GB of RAM, and 250GB of hard-drive storage. With Maxum Development's Phantom 2.0, you can run a Web crawler on a Macintosh.

Phantom isn't a Web surfer's utility for offline browsing; rather, it's a Webmaster's tool for creating searchable indexes of Web sites. You can build a search page for your intranet, for your personal use, or to draw visitors to your site. Phantom also lets you perform maintenance chores, such as backing up a site or creating a site map. It runs on almost any Mac with at least 6MB of free RAM, but if you plan to index tens of thousands of pages, you'll want a dedicated (and well-endowed) Mac. A built-in Web server dishes out Phantom's pages, but it also works with separate servers.



My Agent Will Be in Touch Phantom 2.0 lets visitors create search agents. When the agent finds new or changed pages, Phantom sends them a message.

Phantom 2.0 builds on its predecessor with several enhancements (see "Send In the Robot," January 1997). You now control all aspects of Phantom's operation—including the lists of sites to index, the appearance of the search and results pages, and how often a site's index is updated—using a Web browser, so you can control Phantom and customize your search page from anywhere on the Web. Other new features let you display rotating ad banners and track hits, and Phantom now returns search results in the order it thinks is the most relevant. Even the manual is improved.

One of Phantom's coolest new tricks is that it lets visitors to your site create search agents that repeat a search session at specified intervals. When Phantom indexes new or changed pages that meet certain criteria, it informs those visitors by e-mail (see "My Agent Will Be in Touch").

In my tests, Phantom crashed periodically on a 680X0 Mac running System 7.6. Another bug, present on 680X0 and Power Macs alike, prevents you from using relative font sizes (for example, the **<font size=+1>** HTML tag) in Phantom's pages. Maxum promises a free fix for these bugs.

Macworld's Buying Advice Phantom 2.0.1 should be available by the time you read this; when it arrives, Phantom will be a must-have tool for building sophisticated search engines. Just don't forget to feed the elves.—JIM HEID

RATING: ★★★/6.9 **PROS:** Powerful feature set; excellent customizing features. **CONS:** Some bugs. **COMPANY:** Maxum Development (630/830-1113, *http://www.maxum.com*). **LIST PRICE:** $395.

Buy smart with Macworld Lab.

MACWORLD LAB TEST

Macworld LAB TEST

To buy smart when you're choosing Mac OS hardware or software, you've got to put it to the test. Macworld Lab is on the job, testing, scrutinizing, and evaluating the performance and quality of the products you need. With real-world testing, we measure performance by real-life standards. Using the system and applications you'd use to complete the tasks you're faced with every day, our experts come up with answers that matter to you.

You can rely on Macworld Lab Test results—We test the products the way you use them.

Macworld
THE ESSENTIAL MACINTOSH® RESOURCE

XCLAIM VR
— it's five on the floor plus a whole lot more from ATI

Supercharged 3D acceleration.

Big screen TV output. Now anything you display on your computer can be output to your TV, even recorded to video tape.

Bigger, brighter and faster graphics no compromise 2D performance in true color up to 1152x870.

Video capture lets you grab images and video from your VCR, camcorder and laserdisc so you can add multimedia to any project.

Full-screen, TV-quality QuickTime playback.

Finally, a product that lends more muscle to your PCI Mac. ATI's XCLAIM VR. It's five must-have graphics and multimedia functions revved up into one complete solution, giving you the power to conquer it all. Play, create, view, display or output 3D, 2D and video. This is full-out 3D acceleration, heart-stopping graphics performance, high-gear video playback, MAC2TV capabilities and more for just $269*. See your dealer today, check out **www.atitech.com,** or call us at (905) 882-2600 (press 2 for faxback).

© ATI Technologies Inc., 1997. ATI, Xclaim VR and Now You See It are trademarks and/or registered trademarks of ATI Technologies Inc. All other product names are trademarks and/or registered trademarks of their respective owners. *Suggested ($U.S) retail price for 2MB upgradeable version.

COMPUTER City 1-800-The City

CDW 1-800-363-4239

MICRO CENTER

MacWAREHOUSE 1-800-255-6227

Circle 256 on reader service card

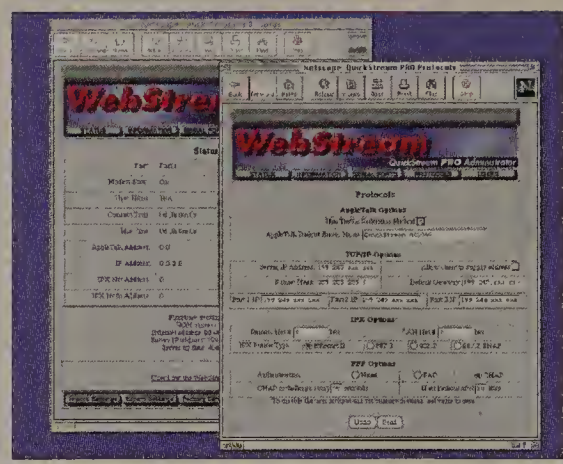
Now You See It.™

QuickStream Pro

WEB CONTROL WOVEN INTO REMOTE-ACCESS SERVER

TELECOMMUTING ON THE MACintosh used to be spelled A-R-A, but Apple Remote Access is difficult or impossible to use with multiple dial-in users and protocols such as IP and IPX. A more complete cross-platform telecommuting solution is Sonic Systems' QuickStream Pro. This remote-access server builds on the IP and AppleTalk capabilities of the earlier QuickStream/3 (see *Reviews*, April 1996) by adding IPX protocol support along with Web-based administration at the same low cost per port. It also improves on its predecessor's performance: in tests using three Motorola BitSurfr Pro ISDN terminal adapters (TAs), three simultaneous connections each carried a full 115 Kbps of traffic without bogging down.

You attach the QuickStream Pro directly to a 10BaseT LAN; three RS-232 serial ports let you attach asynchronous communications devices—modems or ISDN TAs—running at up to 115.2 Kbps. Web-based configuration eliminates the need for serial-port access: you simply set the IP address on a Macintosh to the QuickStream Pro's default IP network and point any Web browser at the QuickStream's default IP address. After setting the unit's actual IP values, you continue configuring the unit using your LAN's normal IP addressing scheme.



Web Administration The QuickStream Pro's built-in administrative Web server lets you use any Web browser for configuration and monitoring.

The remaining setup consists of configuring modems, enabling protocols, and registering users and passwords. The built-in Web server displays the status of each port, maintains the user database, and allows point-and-click configuration; a built-in error log simplifies troubleshooting.

LAN users can access the QuickStream Pro as a dial-out modem server using Stalker Software's PortShare extension. Dial-in users can install the supplied PPP (Point to Point Protocol) client software on remote Macs, or use Apple's Open Transport PPP or a third-party PPP dialer. Windows users can use the Microsoft Remote Access Server PPP dialer such as FreePPP. Because Sonic's bundled PPP dialer supports IP, IPX, and AppleTalk simultaneously, it may be all you need. Although the QuickStream Pro supports only one user per dial-up connection, you can run routing software at a remote site to use the QuickStream as a LAN-to-LAN router.

Macworld's Buying Advice Nothing is as versatile and easy to use as the QuickStream Pro for giving small groups telecommuting access. Its Web interface makes administration a snap from anywhere in the world; its dial-out capabilities let it double as a shared modem pool; and its IPX support means it can serve Windows and Novell NetWare users.—MEL BECKMAN

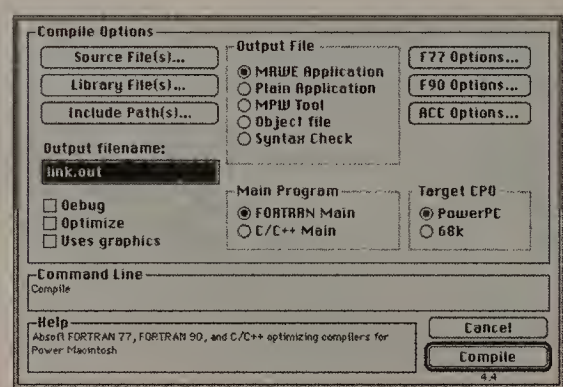
RATING: ★★★★/8.4 **PROS:** Low price per port; Web administration; supports IP, IPX, and AppleTalk protocols; dial-out capabilities; improved diagnostics and performance. **CONS:** Dial-out software not included. **COMPANY:** Sonic Systems (408/736-1900, *http://www.sonicsys.com*). **LIST PRICE:** $999.

Pro FORTRAN 5.0

A FAST LANGUAGE FOR BIG SCIENCE

JAVA MAY BE THE HOT COMPUTer language of the nineties, but you wouldn't know it to look at business and government sites; in the real world, older languages like COBOL and FORTRAN are still doing much of the day-to-day work at banks, government labs, and NASA. In big-project scientific and numeric calculation, for example, the ancient FORTRAN language in one of its newer forms—FORTRAN 77 or FORTRAN 90—is still grinding away on optimized legacy code.

Source code originally written for Cray and Fujitsu supercomputers can now run without serious modification on a Mac using Absoft's latest Pro FORTRAN package. This formidable suite includes compilers for FORTRAN 77, the more modern FORTRAN 90, and the thoroughly modern C/C++ (optimized for use in the MPW Shell); IMSL's FORTRAN numerics and statistics libraries, the best available for any language, are available as an option. All this magnificence takes a little more programming background to put into action than the new CodeWarrior-adapted LS FORTRAN from Fortner Research (see *Reviews*, February 1996), but compiled code runs two to three times faster with Absoft—and for most FORTRAN users, speed of executables is the number one consideration.



Boxed In A simple dialog box in Pro FORTRAN controls all sorts of powerful options, including specific compilation optimization for the 604e.

The program makes itself practically invisible: you simply install it, set a few options, and watch the Pro FORTRAN compiler devour your source code (see "Boxed In"). On four benchmarks—two of my own and two industry-standard SPECmark routines—the compiled code running on a 604e-based Mac executed roughly twice as fast as the same programs compiled in LS FORTRAN. The Absoft product also breezed through a grueling test pastiche of combined C and FORTRAN code.

As a language that started life when RAM was measured in 4KB chunks, FORTRAN has a huge bag of optimization tricks and is the topic of many reference books—and the new FORTRAN-based teaching language F suggests that FORTRAN will have some big-computer tasks all to itself for at least another decade.

Macworld's Buying Advice Mac loyalists in the science community will find plenty to like in the latest Pro FORTRAN. LS FORTRAN's more modern, color-coded editor (Absoft's language is still tied to Apple's MPW Shell) and slightly faster compilation give it an edge for new users, but Pro FORTRAN produces faster compiled programs and has a better debugger for FORTRAN-specific optimization methods. If you're porting workstation or supercomputer FORTRAN code to a Mac, in most cases Absoft Pro FORTRAN 5.0 will be the better choice for execution speed. And for FORTRAN 90 code on the Mac, it's your *only* choice.—CHARLES SEITER

RATING: ★★★★/7.4 **PROS:** Superior performance of compiled code; few Mac porting modifications. **CONS:** Some popular editor features missing. **COMPANY:** Absoft (810/853-0050, *http://www.absoft.com*). **LIST PRICE:** $899.

Time for a Mac Brew

CD-Speedster™

DO IT FASTER! CD-Speedster increases your cache flow. Cached data is always accessed from the fastest available source so you get data faster and your CD searches sizzle.

syncronys softcorp™

RAM Charger 3.0™

DO MORE! RAM Charger adds dynamic RAM management to your Mac OS so it pumps every System 7.x Mac to run even more RAM-hungry applications.

Burn-It!™

DO IT SAFER! Burn-It! destroys data you select with a simple drag and drop by wiping the underlying sectors clean with repeated writes of random data. Now your data is really dead!

for more information call **1.888.777.5600**

Syncronys Softcorp

s y n c r o n y z i n g

man and machine

www.syncronys.com

©1997 Syncronys Softcorp. All rights reserved. Syncronys, the Syncronys logo, Burn-It!, RAM Charger 3.0 and CD-Speedster are all registered trademarks of Syncronys Softcorp.

Circle 55 on reader service card

Only One Company Can Give You **Removable Storage** This Rugged and Reliable. **Fujitsu.**

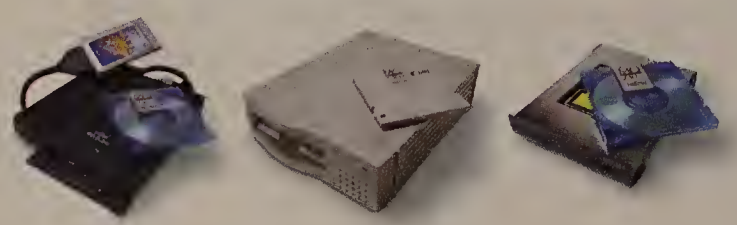
On location with the DynaMO® 230 and the DynaMO 640. When rock climbing, you'd never compromise with the tools you use. The same idea applies to backing up, transferring and transporting critical files. • That's where the DynaMO 230 and the DynaMO 640 come into the picture. They're the perfect tools for designers who need to transport and transfer graphics files, for sales organizations that need to store multimedia presentations on a single disk, and for government agencies that need to archive records. • In fact, you won't find removable storage that's more rugged or reliable. A single MO disk has a life span of over 10 million writes and over 100 million reads. • Which leads us to Fujitsu's customer support policy. No Excuses™. More than just a slogan, it's our commitment to provide you with the ultimate in service, including technical support at no charge. Which is just another way of saying, Fujitsu has set a new standard of excellence in removable storage. • The DynaMO 230 and DynaMO 640. When you add it all up, everything that matters is DynaMO driven. • DynaMO 230 and the DynaMO 640 are available wherever quality removable storage drives are sold. For more information, call 1-800-735-4510. Or discover DynaMO on our website at http://www.fcpa.com.

DynaMO 640

- 640MB per disk
- Backwards compatible with 540MB, 230MB and 128MB media
- Internal or external versions for desktop systems
- Interface: SCSI-2

DynaMO 230

- 230MB per disk
- Backwards compatible with 128MB media
- Internal or external versions available far partable and desktop systems



You're looking at the most reliable ways to backup, transport and transfer data ever devised—the DynaMO Portable PC Card, DynaMO 640 and DynaMO 230. The perfect solutions for people who want it all: price, performance and dependability.

FUJITSU

© 1997 Fujitsu Computer Products of America, Inc. All rights reserved. DynaMO is a registered trademark and No Excuses is a trademark of Fujitsu Computer Products of America, Inc. All trademarks are property of their respective companies.

Circle 202 on reader service card

Star Ratings

HARDWARE AND SOFTWARE PRODUCTS AT A GLANCE

Macworld's Star Ratings let you compare Macintosh products based on the authoritative assessments in our reviews and features.

What the Scores Mean The number of stars indicates the product's level of quality; each product also gets a numeric score that provides a more exact assessment of the product's quality within that level. The chart below shows the meaning for each level.

We evaluate seven factors to derive the Star Rating: feature set, design implementation, performance, reliability, ease of use, innovation, and value. We take these evaluations, weight their importance for each class of product, and calculate the final score. The higher the score, the better a product is, even among products with the same number of stars.

Editors' Choice This section also lists products that have been awarded an Editors' Choice designation in a *Macworld* product comparison. That designation indicates a best-of-class product for a particular need.

Ratings Online The ratings listed here are of recently reviewed products in select categories. For a complete, searchable list, go to Macworld Online, at *http://www.macworld.com/pages/star/ratings.html*.

Full Reviews To read a full review of any product in the listing, please consult the issue indicated at the end of the listing or search for the product via Macworld Online (keyword *Macworld* on America Online; URL *http://www.macworld.com* on the World Wide Web). If a product has been upgraded since our last assessment, the most recent version number appears in parentheses after the main reviewed version number.

Vendors: Please write to Macworld Star Ratings, 501 Second St., San Francisco, CA 94107, to inform us of changes in the version number or list price of your product, or of changes to your phone number.

Software

BUSINESS

★★★★/8.9 **Analytica**, Decisioneering, 303/534-1515, $795. Financial-modeling tool helps you assess business decisions. *Mar 97, p. 72*

★★/4.2 **Ascend 4.0**, Franklin Quest, 801/975-1176, $99.95. Information manager isn't competitive with other PIMs. *Apr 97, p. 72*

★★★★/7.9 **Big Business 2.0**, Big Software, 408/725-7200, $199 to $999. All-in-one business application integrates sales, marketing, ordering, and accounting. *Jan 97, p. 64*

★★★★/8.1 **Claris Organizer 2.0**, Claris, 408/727-8227, $69. Solid upgrade is worth the wait. *Jan 97, p. 62*

★★★/5.4 **Day-Timer Organizer 2.1**, Day-Timer Technologies, 415/572-6260, $79.95. All-in-one PIM improved, but not perfect. *Mar 97, p. 72*

★★/3.8 **ePaper 1.5**, Second Glance Software, 360/692-3694, $169. Offers some markup tools, but if you're serious about OCR, invest in a dedicated package. *Jun 97, p. 64*

★★★/6.9 **Mariner Write 1.3**, Mariner Software, 502/222-6695, $69.95. Word processor stresses speed and elegance. *Mar 97, p. 63*

★★★★/8.5 **MYOB Accounting 7**, BestWare, 201/586-2200, $89.95 to $139.95. Entry-level accounting package combines ease of use and power. *May 97, p. 69*

★★★★/8.6 **Now Contact and Up-to-Date 3.6.5**, Now Software, 503/274-2800, $99.95. Personal info-management duo gets connected to the Net. *Jun 97, p. 70*

★★★★/8.9 **Personal RecordKeeper 4.0**, Nolo Press, 510/549-1976, $49.95. Database helps you keep tabs on personal information. *Mar 97, p. 83*

★★★★/7.6 **PowerBuilder 5.0**, PowerSoft, 508/287-1500, $2995. Key cross-platform database tool puts Mac's SQL skills on par with Unix and NT. *Apr 97, p. 70*

★★★/6.9 **Quicken Business Law Partner 2.0**, Parsons Technology, 319/395-9626, $49. Suffices if you want to get the job done with a minimum of fuss. *Feb 97, p. 84*

★★★★/8.7 **Quicken Deluxe 7.0**, Intuit, 520/295-3220, $59.95. Indispensable financial manager. *Feb 97, p. 64*

★★★★/7.4 **Scripter 2.0**, Main Event Software, 202/298-9595, $199. Easy way to make CGIs work on a Mac-based Web site. *Apr 97, p. 74*

★★★★/7.6 **Small Business Legal Pro Deluxe 2.0**, Nolo Press, 510/549-1976, $59.95. A great value if you want to be fully informed. *Feb 97, p. 84*

★★★/5.1 **TakeNote 1.0**, Academix Software, 415/493-3003, $79.95. Reference tool goes halfway to replacing the familiar index card. *Jan 97, p. 88*

★★★★/7.1 **Timeslips 4.0**, Timeslips, 214/248-9232, $299.95. Time-tracking and -billing package is unnecessarily complex. *Jan 97, p. 86*

★★★/5.0 **ViewOffice PowerSuite**, NewSoft, 510/445-8600, $79. Inexpensive scanning with solid image-editing tools but unimpressive OCR features. *Jun 97, p. 64*

GRAPHICS

★★/4.8 **3D WalkAround 1.0**, Abracadata, 541/342-3030, $99.99. Unsuitable for architectural projects, but fine for simple interior space planning. *Jun 97, p. 81*

★★★★/7.1 **Adobe Illustrator 6.0.1**, Adobe Systems, 415/961-4400, $595. Efficient, well-organized drawing program doesn't surpass FreeHand 5.5. *Jan 97, p. 112*

★★★/5.7 **Canvas 5.0**, Deneba, 305/596-5644, $599.95. Midrange graphics program has professional price. *Jan 97, p. 112*

★★/4.8 **Chromatica**, Chroma Graphics, 415/375-1100, $149.95. Handy but limited Photoshop plug-in. *Feb 97, p. 80*

★★★★/7.0 **ColorWeb 1.0**, Pantone, 201/935-5500, $29.95. Simple, inexpensive color picker and swatch book move to the Web. *May 97, p. 84*

★★/4.6 **CorelDraw 6 Suite**, Corel, 613/728-8200, $595. Graphics suite lacks solid image-editing and drawing programs. *Jan 97, p. 112*

★★★/6.3 **DesignWorkshop 1.5**, Artifice, 541/345-7421, $595. Low-end modeler offers excellent modeling tools. *Apr 97, p. 74*

★★★★/8.9 **Detailer**, Fractal Design, 408/430-4000, $449. Wonderful imaging tool lets you paint directly on 3-D models. *Feb 97, p. 72*

★★★★/8.6 **Expression 1.0**, Fractal Design, 408/688-5300, $449. Object-oriented natural-media drawing arrives—at last. *Mar 97, p. 50*

★★★★/8.1 **Extreme 3D 2.0**, Macromedia, 415/252-2000, $399. Great 3-D design program for print, animation, Web, and multimedia. *Apr 97, p. 70*

★★★★/8.7 **FreeHand 7**, Macromedia, 415/252-2000, $399. Near-perfect draw program. *Feb 97, p. 56*

★★★★/7.9 **FreeHand Graphics Studio 7**, Macromedia, 415/252-2000, $449. Suite provides professional-level power at an affordable price. *Feb 97, p. 56*

★★★★/8.3 **Full Pixel Search 2.0**, Avian Systems, 201/568-9494, $295. Image-analysis program finds a pixel in a haystack. *Mar 97, p. 84*

★★★★/7.9 **Infini-D 3.5**, Specular, 413/253-3100, $649. Approachable, practical mix of 3-D design

continues

REAL PRODUCTS REAL RATINGS Reviews you can trust: Unlike other publications, Macworld rates only final shipping products, not prototypes. What we review is what you can actually buy.
Outstanding ★★★★★ = 9.0–10.0 Very Good ★★★★ = 7.0–8.9 Good ★★★ = 5.0–6.9 Flawed ★★ = 3.0–4.9 Unacceptable ★ = 0–2.9

Star Ratings

ingredients. *Jan 97, p. 70*

★★★★/8.3 **Kai's Power Goo,** MetaTools, 805/566-6200, $49.95. Family image-editing software that pros will use. *Jan 97, p. 84*

★★★★/8.1 **Macromedia FreeHand 5.5,** Macromedia, 415/252-2000, $595. Draw program outperforms all competitors. *Jan 97, p. 112.* **Editors' Choice** for best illustration software.

★★★★/8.3 **Photoshop 4.0,** Adobe Systems, 415/961-4400, $895. New version cements image editor's position as the top product. *Feb 97, p. 132*

★★★/5.7 **PhotoTools 1.0,** Extensis, 503/274-2020, $99.95. Useful Photoshop plug-in. *Feb 97, p. 80*

★★★★/8.1 **Poser 2.0,** Fractal Design, 408/430-4100, $249. Human models in 3-D (clothing optional). *Mar 97, p. 76*

★★/4.4 **Power/Pac 1,** Auto F/X, 603/875-4400, $249. Macros for Photoshop are useful but restrictive. *Feb 97, p. 80*

★★★★/8.2 **PowerCADD 3.0,** Engineered Software, 910/299-4843, $795. Fast, pro-level drafting program gets some refinements. *Jan 97, p. 74*

★★★★/8.9 **ScanPrepPro 3.1,** ImageXpress, 770/564-9924, $695. Photoshop plug-in puts image processing on autopilot. *Mar 97, p. 80*

★★★/6.5 **Stencil It 1.0,** Kaetron Software, 713/298-1500, $99. Low-cost program is good for charts, but not for art. *Jan 97, p. 72*

★★★★/7.4 **TurboCAD 2D/3D 3.0,** IMSI, 415/257-3000, $149. Nearly high-end CAD program with educational-software price. *Dec 96, p. 61*

★★★★/7.5 **WalkThrough Pro 2.6,** Virtus, 919/467-9700, $495. Best choice to quickly and elegantly create an architectural walk-through. *Jun 97, p. 81*

★★★★/8.7 **xRes 3,** Macromedia, 415/252-2000, $399. Ho-hum image editor. *Feb 97, p. 56*

INTERNET/NETWORKING

★★★/6.5 **3-D Website Builder,** Virtus, 919/467-9700, $159. VRML authoring program is straightforward but limited. *Feb 97, p. 82*

★★★/6.6 **ActionLine 1.1,** Interactive Media, 415/948-0745, $99. Beginners can add pizzazz to Web pages without Java programming. *Apr 97, p. 76*

★★★★/7.7 **Adobe PageMill 2.0,** Adobe Systems, 408/536-6000, $149. WYSIWYG approach to Web design is appealing and efficient. *Feb 97, p. 58*

★★★★/7.0 **Bolero,** EveryWare Development, 905/819-1173, $995 to $4995. Best tool for gathering demographics from your Web site; expensive. *Apr 97, p. 68*

★★★★/7.0 **Claris Home Page 2.0,** Claris, 408/727-8227, $99. Web authoring tool is great for building small to medium-size sites. *May 97, p. 56*

★★★★/8.1 **CommuniGate 2.8,** Stalker Software, 415/383-7164, free (5 users) up to $600 (200 users). Fast, reliable multimedia messaging suite adds new features. *Jun 97, p. 86*

★★★★/7.8 **CyberFinder 2.0,** Aladdin Systems, 408/761-6200, $30. Unobtrusive, small, and incredibly stable URL manager. *Mar 97, p. 58*

★★★★/7.0 **CyberPress 1.0,** Extensis, 503/274-2020, $149. QuarkXPress-to-HTML conversion on a budget. *Mar 97, p. 78*

★★★★/7.3 **Dave 1.0,** Thursby Software Systems, 817/478-5070, $179. Painless Mac file sharing on Windows networks. *May 97, p. 72*

★★★★/7.0 **DragNet 1.1.4,** On8ase Technology, 714/830-5682, $39.95. While good for managing huge URL lists, software is a RAM hog. *Mar 97, p. 58*

★★★/5.3 **FileMaker Pro CGI,** Claris, 408/987-7000, free. Slow and inflexible FileMaker Pro Web publishing tool. *Apr 97, p. 114*

★★★★/7.6 **FirstClass 3.5,** SoftArc, 905/415-7000, $495. To create a complete e-mail community, this package is the way to go. *Mar 97, p. 48*

★★/4.1 **Globetrotter 1.1,** Akimbo Systems, 617/776-5500, $99. Web tool avoids HTML but has stability problems. *Apr 97, p. 66*

★★/4.2 **HoTMetaL Pro 3.0,** SoftQuad, 416/544-9000, $159. Dramatically improved Web editor is powerful but still quirky. *Feb 97, p. 58*

★★★/6.8 **HTML Grinder 3.04,** Matterform Media, 505/983-4189, $149. Tools automate site-management chores. *Mar 97, p. 76*

★★/4.9 **Insta.html 1.0,** Trailer Parc Technologies, 415/248-1350, $179. Overpriced plug-in has trouble with FreeHand-to-Web conversion. *May 97, p. 82*

★★★★/7.3 **Internet Phone 3.0.1,** VocalTec, 201/768-9400, $49.95. Lets you make low-cost calls over the Internet. *Jan 97, p. 68*

★★★★/7.2 **Lasso 1.1,** Blue World Communications, 206/313-1051, $299. Lasso successfully ties FileMaker Pro databases to the Web. *Apr 97, p. 114.* **Editors' Choice** for best Web Database.

★★★/6.5 **Lasso Lite 1.0.6,** Blue World Communications, 206/313-1051, free. FileMaker Pro Web publishing tool is fast and free. *Apr 97, p. 114*

★★★/6.7 **Marionet 1.1.1,** Allegiant Technologies, 619/587-0500, $149. Flexible scripting and search tool for authoring environments, but it requires significant programming knowledge. *Jan 97, p. 152*

★★★★/7.1 **NetObjects Fusion 1.0,** NetObjects, 415/482-3200, $695. Delivers precise positioning of Web page elements; no spelling checker. *May 97, p. 60*

★★★/6.9 **PageSpinner 1.2.2,** Optima System, *http://www.algonet.se/~optima/pagespinner.htm*, $25. Great tool for creating Web pages—especially for novice users. *Mar 97, p. 54*

★★★/6.0 **Quarterdeck Mail 4.0,** StarNine Technologies, 510/649-4949, $395 server; $245, 5-user pack. Cost-effective, all-in-one e-mail solution. *Mar 97, p. 48*

★★★/6.6 **QuickMail Pro 1.0,** CE Software, 515/221-1801, $69.95 to $3449.95. E-mail system has a good basic feature set. *Mar 97, p. 48*

★★/3.6 **QuickSite 1.0,** DeltaPoint, 408/648-4000, $99.95. Clunky interface hobbles potential Web-design powerhouse. *Mar 97, p. 68*

★★★/6.5 **ROFM 4.1,** Russell Owen, *http://rowen.astro.washington.edu*, free. Web publishing freeware with more features, but needs modification. *Apr 97, p. 114*

★★★★/7.5 **RunShare 2.1,** RUN, 201/529-4600, $399 (2 users) up to $2499 (25 users). AppleTalk network tool revs up file transfers by 250 to 400 percent. *Jun 97, p. 86*

★★★★/8.0 **Surfboard 1.0,** Abbott Systems, 914/747-3116, $39. Intuitive URL manager looks like a TV's remote control. *Mar 97, p. 58*

★★★★/7.3 **Tango for FileMaker Pro 2.1.1,** EveryWare Development, 905/819-1173, $349. No faster way to Web-enable a FileMaker Pro database. *Apr 97, p. 114.* **Editors' Choice** for best Web Database.

★★★★/7.2 **Visual Cafe 1.0,** Symantec, 541/334-6054, $199.95. Faster, easier Java coding, great for creating applets from scratch. *May 97, p. 67*

★★★★/7.2 **Visual Page 1.0,** Symantec, 541/334-6054, $99.95. Web authoring tool has polished features and is easy to use. *May 97, p. 56*

★★★★/8.2 **Web Quick 1.2.1,** Europa Software, 503/417-2900, $49.95. Convenient URL manager follows your trail as you browse. *Mar 97, p. 58*

★★★/6.7 **Web Squirrel 1.06,** Eastgate Systems, 617/924-9044, $49. RAM-hungry URL manager is a powerful organizer. *Mar 97, p. 58*

★★★★/7.0 **Web-FM 3.0,** Web Broadcasting, 415/329-9676, $245. FileMaker Pro Web integration tool is strong and fast but hard to learn. *Apr 97, p. 114*

★★★★/7.7 **WebStar 2.0,** StarNine Technologies, 510/649-4949, $795. Web server is better, stronger, faster. *Apr 97, p. 62*

★★★/6.8 **World Wide Web Weaver 2.0.2,** Miracle Software, 315/265-0930, $89. Web-authoring tool is particularly good at editing existing pages. *Mar 97, p. 54*

MEDIA

★★★/6.2 **Acrobat 3.0,** Adobe Systems, 408/536-6000, $295 to $1595. New features still limit use of this portable document program. *Apr 97, p. 52*

★★★★/7.1 **Adobe Persuasion 4.0,** Adobe Systems, 408/536-6000, $395. Presentation application makes the leap to the Web. *Mar 97, p. 52*

★★★★/8.5 **Aurorix 2.0,** DigiEffects, 415/841-9901, $289. From aged film to earthquakes, Aurorix's 26 usable effects are creatively designed. *May 97, p. 118.* **Editors' Choice** for best After Effects plug-ins.

★★★★/8.1 **Berserk 1.3,** DigiEffects, 415/841-9901, $289. This After Effects plug-in has great fog, blizzard, laser, and star-field effects. *May 97, p. 118.* **Editors' Choice** for best After Effects plug-ins.

★★★★/7.7 **Boris Effects 2.1 MP,** Artel Software, 617/451-9900, $350 to $695. Best Adobe Premiere and Media 100 plug-in; adds motion graphics, keying, and transition effects. *May 97, p. 118.* **Editors' Choice** for best Premiere and Media 100 plug-ins.

★★★/6.8 **ClickWorks 1.0.2,** Pitango, 617/280-7163, $985. Presentation program is a solid choice. *Feb 97, p. 74*

★★★★/7.5 **Cyclonist 1.0,** DigiEffects, 415/841-9901, $495. This particle-generation specialist is a complex After Effects plug-in. *May 97, p. 118*

★★★/6.7 **Digital Chisel://HTML 2.1.3,** Pierian Spring Software, 503/222-2044, $109 to $995. Multimedia authoring doesn't make it on the Web. *Jan 97, p. 78*

★★★/6.4 **Dynamic Effects 1.0,** Gryphon Software, 619/536-8815, $119. A solid but uninspiring filter plug-in collection for Adobe Premiere. *May 97, p. 118*

★★★★/8.3 **Final Effects AP 1.0,** MetaTools, 805/566-6200, $199. Ideal for Adobe Premiere-based particle generation and distortion. *May 97, p. 118*

★★★★/8.2 **HoloDozo 1.0,** M.M.M. Software, *holodozo@mmmsoft.com*, $149. Novel Adobe Premiere plug-in has a clever interface, uses QuickDraw 3D. *May 97, p. 118*

★★★★/8.9 **KPT Final Effects 3.0.1,** MetaTools, 805/566-6200, $695. This superb effects collection works with Adobe After Effects. *May 97, p. 118*

★★★★/8.9 **Lens Flare Pack 1.5,** Knoll Software, 415/453-2471, $129. This After Effects plug-in generates unmatched lens flare effects. *May 97, p. 118.* **Editors' Choice** for best After Effects plug-ins.

★★★/6.7 **LightWave 3D 5.0,** NewTek, 303/448-9700, $1495. Pro-level animation program lacks interface elegance. *May 97, p. 74*

★★★★/7.4 **Movie Cleaner Pro 1.2.1,** Terran Interactive, 408/278-9025, $189.95. First-rate movie compression utility is a must-have. *Jan 97, p. 81*

★★★★/7.2 **MovieFlo' 2.0.2,** The Valis Group, 415/435-5404, $699. Image-distortion software for pros. *Jan 97, p. 92*

★★★/5.5 **MovieStar 1.5,** Intelligence at Large, 215/387-6002, $149.95. Easy QuickTime moviemaking and animation for the Internet. *Feb 97, p. 92*

★★★/5.4 **MovieTools 1.5,** McQ Productions, 415/348-1344, $195. Simple, precise QuickTime movie

processing. *Apr 97, p. 72*

★★★★/7.3 **mTropolis 1.1,** mFactory, 415/548-0600, $1195. Sophisticated authoring environment is a terrific tool for game developers. *Feb 97, p. 74*

★★★/6.6 **Nisus Writer 5.0,** Nisus Software, 619/481-1477, $249. Renegade word processor is long on innovation, short on basics. *Apr 97, p. 56*

★★★/6.8 **PageMaker 6.5,** Adobe Systems, 408/536-6000, $895 (estimated). Even with a wealth of new features, still can't beat QuarkXPress. *May 97, p. 48*

★★★★/7.8 **QX-Tools 2.0,** Extensis, 503/274-2020, $99.95. Winning collection of XTensions gets even better. *Mar 97, p. 65*

★★★★/8.4 **Studio Effects 1.0,** MetaTools, 805/566-6200, $695. Adobe After Effects plug-ins include 3-D particle generator and great spotlight effects. *May 97, p. 118*

★★★★/7.0 **SuperCard 3.0,** Allegiant Technologies, 619/587-0500, $329 (estimated). Veteran authoring tool gets a cool Web plug-in; a few Web-related bugs. *May 97, p. 58*

★★★/6.4 **TransFX 1.0,** DigiEffects, 415/841-9901, $45. Inexpensive and fun transition collection for Adobe Premiere. *May 97, p. 118*

★★★★/7.5 **TypeCaster 2.0,** Xaos Tools, 415/538-7000, $199. 3-D text plug-in renders beautiful text that you can animate. *May 97, p. 118*

★★★/6.8 **Ultimatte for Macintosh 2.0,** Ultimatte, 818/993-8007, $1495. Complex, costly plug-in does an unmatched job of keying. *May 97, p. 118*

★★★/6.3 **UniQorn 1.2,** SoftPress Systems, 415/331-4820, $895. Easily turns print into Java-powered Web pages; features still a bit sluggish. *Apr 97, p. 58*

★★★★/8.8 **Video SpiceRack 1.0,** Pixélan Software, 360/647-0112, $179. Novel plug-in collection has more than 300 transition and effect gradients. *May 97, p. 118*

UTILITIES

★★★★/7.5 **Adobe Type Manager Deluxe 4.0,** Adobe Systems, 408/536-6000, $99.95. The new ATM has font substitution and antialiasing. *Jun 97, p. 58*

★★★/6.8 **Adobe Type Reunion Deluxe 2.0,** Adobe Systems, 408/536-6000, $60. This font-menu manager has cool features but isn't as good as TypeTamer. *Jun 97, p. 58*

★★★/6.7 **After Dark 4.0,** Berkeley Systems, 510/540-5535, $30 to $40. Glitzier, but not necessarily better, than previous versions. *Feb 97, p. 76*

★★★★/7.5 **Audiotracer 1.0,** Optical Media, 408/376-3511, $99. CD-R mastering program designed for creating audio CDs. *Apr 97, p. 76*

★★★/6.0 **Burn It 1.0,** Syncronys Softcorp, 213/340-4100, $29.95. Inexpensive but flawed security suite. *Apr 97, p. 69*

★★★★/7.6 **CanOpener 3.5,** Abbott Systems, 914/747-4171, $65. Reliably recovers text and graphics from damaged files. *Feb 97, p. 88*

★★★★/8.3 **CodeWarrior 10 Gold,** Metrowerks, 512/873-4700, $399. Programming environment has an impressive collection of new touches. *Feb 97, p. 76*

★★★★/7.6 **Cumulus Desktop 3.0,** Canto Software, 415/905-0300, $99.95. Affordable multimedia database offers power and a superior interface. *Jun 97, p. 68*

★/1.8 **Executor 2.0,** Abacus Research & Development, 505/766-9115, $249. Mac emulator for PCs falls far, far short. *Feb 97, p. 78*

★★★/6.8 **Fetch 1.5,** Extensis, 503/274-2020, $99.95. Multimedia database has cool features but lacks flexibility and ease of use. *Jun 97, p. 68*

★★/3.0 **Front Office 1.6 LE,** STF Technologies, 816/220-0100, $59. A bad temp wouldn't garble your phone messages this badly. *Jun 97, p. 66*

★★★/5.7 **InfoGenie 2.0,** Casady & Greene, 408/484-9228, $79.95. Updated information manager adds links to Web browsers. *Jun 97, p. 84*

★★/3.8 **Internet Voice Mail 3.0,** VocalTec, 201/768-9400, $29.95. Internet Voice Mail has limited functionality and is full of bugs. *May 97, p. 80*

★★★★/8.8 **LetterRip 1.0.2,** Fog City Software, 408/454-1405, $295. Mailing-list server is simpler and cheaper than ListStar. *Jun 97, p. 77*

★★★★/8.3 **ListStar 1.1,** StarNine Technologies, 510/649-4949, $499. Serious mailing-list management with industrial-strength tools. *Jun 97, p. 77*

★★★★/7.2 **MAE 3.0,** Apple Computer, 408/996-1010, $459. Mac-in-the-box for Unix workstations. *Jun 97, p. 73*

★★★/6.4 **Now Utilities 6.5,** Now Software, 503/274-2810, $89.95. Incremental feature upgrades are no substitute for stability. *Mar 97, p. 74*

★★★★/7.2 **OmniPage Pro 7.0,** Caere, 408/395-7000, $499. OCR package has improved interface but not accuracy. *Jun 97, p. 83*

★★★/6.6 **Online Army Knife 1.2,** JEM Software, 303/422-4766, $69.95. Add-on spelling checker is fast and Internet-savvy but has some rough edges. *Jun 97, p. 62*

★★★★/8.1 **QUED/M 3.0.1,** Nisus Software, 619/481-1477, $119. Power editor for programmers. *Jan 97, p. 94*

★★★/6.4 **SAM 4.5,** Symantec, 408/253-9600, $69.95. Industrial-strength virus protection. *Feb 97, p. 86*

★/2.6 **SpeechPrompter,** Orator Company, 619/420-9150, $89.95. Prompter software's jerky scrolling makes index cards look good. *Jun 97, p. 88*

★★★★/7.2 **Speed Doubler 2.0.1,** Connectix, 415/571-5100, $99. Upgrade boosts network transfer times, same speed as prior versions. *May 97, p. 52*

★★/4.8 **Spellswell Plus 2.1.1,** Working Software, 408/423-5696, $14.95. Add-on spelling checker doesn't live up to its name. *Jun 97, p. 62*

★★★/6.0 **SpellTools 1.2.1,** Newer Technology, 316/943-0222, $19.95. Add-on spelling checker has text-to-speech feature but no interactive checking, *Jun 97, p. 62*

★★/4.0 **Startup Manager 7.0,** Now Software, 503/274-2810, $55. Extension-management tool simply can't compare to the competition. *Mar 97, p. 61*

★/2.7 **StellarFax 1.1,** TechPool, 216/291-1922, $249. Sends inferior-quality faxes faster. *Feb 97, p. 90*

★★/4.6 **Turbo Toolkit 1.0,** FWB Software, 415/463-3500, $79. Disk utility offers minor speedup. *Mar 97, p. 74*

★★★★/8.8 **Virex 5.7,** Datawatch, 508/988-9700, $99. Great virus-detection features, checks downloaded Internet files for viruses. *May 97, p. 78*

★★★★/8.0 **Wingz 2.1.1,** Investment Intelligence Systems Group, 913/663-4472, $399. Powerful programming tool disguised as a spreadsheet. *May 97, p. 71*

★★★/6.5 **Working Papers,** Dominion Software, 617/332-1144, $199.95. Manage your documents with OCR program and document organizer. *Feb 97, p. 94*

Hardware

DIGITAL CAMERAS

★★/3.9 **Casio QV-100,** Casio, 201/361-5400, $599. Camera produces poor-quality images with blown highlights. *Mar 97, p. 112*

★★★/5.8 **Casio QV-10A,** Casio, 201/361-5400, $399. Blown highlights and color cast problems mar images from camera. *Mar 97, p. 112*

★★★/6.6 **D-200L,** Olympus Image Systems, 516/844-5000, $599. Digital camera offers good image quality and a built-in flash. *Mar 97, p. 112*

★★/4.6 **DC20,** Kodak, 716/724-4000, $350. Pint-size camera contains no extras whatsoever. *Mar 97, p. 112*

★★★/6.8 **DC50,** Kodak, 716/724-4000, $979. Good color, expandability, and an excellent zoom lens set the DC50 apart. *Mar 97, p. 112.* **Editors' Choice** for best entry-level digital cameras.

★★★/6.0 **Epson PhotoPC,** Epson, 310/782-0770, $499. Digital camera's viewfinder doesn't show the whole image. *Mar 97, p. 112*

★★★★/7.1 **Fuji DS-7,** Fuji Photo Film, 914/789-8100, $699. Camera makes framing and reviewing photographs child's play. *Mar 97, p. 112.* **Editors' Choice** for best entry-level digital cameras.

★★★★/7.9 **PDC-2000-40,** Polaroid, 716/256-4436, $3695. Digital camera is difficult to use and not inexpensive, but produces extremely high-quality images. *Mar 97, p. 112.* **Editors' Choice** for best entry-level digital cameras.

★★★/6.2 **QuickTake 150,** Apple Computer, 408/996-1010, $739. Oversized camera quickly downloads images. *Mar 97, p. 112*

★★★/5.8 **RDC-2,** Ricoh, 702/352-1600, $999. Fair-to-middling image quality detracts from this camera's extras. *Mar 97, p. 112*

INPUT DEVICES

★★★★/8.9 **3M Precise Mousing Surface,** 3M, 612/733-1110, $15. Throw out your neoprene pad and treat your mouse to a deluxe surface. *Jan 97, p. 56*

★★★★/8.5 **AlphaSmart Pro 2.1,** Intelligent Peripheral Devices, 408/252-9400, $269. Intelligent keyboard works as stand-alone input device. *Mar 97, p. 82*

★★★/5.2 **GlidePoint Keyboard,** Alps Electric, 408/432-6000, $139.95. Keyboard offers full set of keys with intuitive touchpad. *Apr 97, p. 60*

★★★/6.6 **NoHands Mouse,** Hunter Digital, 310/471-5852, $199.95. Foot-operated mouse offers a hands-free alternative. *Jun 97, p. 83*

★★★/5.5 **Stingray 4.0,** CoStar, 203/661-9700, $55. Trackball offers flexible design but limited programmability. *Feb 97, p. 70*

★★★/5.9 **TrackBoard and NumPad,** Datadesk, 206/842-5480, $99.95 to $139.95. Keyboard has a separate numeric keypad but only a small trackball. *Apr 97, p. 60*

★★★/5.2 **TrackMan Marble,** Logitech, 510/795-8500, $99. Restrictive design and unimpressive software. *Feb 97, p. 70*

★★★★/8.5 **Turbo Mouse 5.0,** Kensington, 415/572-2700, $110. MouseWorks software makes programmable trackball a standout. *Feb 97, p. 70*

MISCELLANEOUS HARDWARE

★★★★/7.0 **Apex,** Pinnacle Micro, 714/789-3000, $1995. King-size magneto-optical drive offers respectable speeds. *Apr 97, p. 54*

★★★★/7.5 **DynaTek CDM 4001,** DynaTek Automation Systems, 902/832-3000, $2889. Hard drive/CD-R combo unit simplifies CD-ROM mastering. *Mar 97, p. 78*

★★★/5.1 **FM Radio 1.1,** La Cie, 503/520-9000, $49.95. If you want to listen to the radio, you're better off buying a boom box. *Jun 97, p. 90*

★★★★/7.8 **Pilot,** Palm Computing, 415/237-6000, $249 to $299. Pocket PDA is small, swift, and sweet. *Apr 97, p. 48*

★★/4.7 **Pippin @World,** Bandai Digital Entertainment, 310/404-1600, $499.99; $69.99 for keyboard. Costly Internet-connection and games device has poor image quality. *May 97, p. 64*

★★★★/7.8 **Sagem Planet ISDN GeoPort Adapter,**

continues

Star Ratings

Sagem, 408/446-8693, $395. ISDN terminal adapter breaks serial port speed barrier. *Mar 97, p. 66*

★★★/6.4 **WebRamp,** Trancell Systems, 408/988-5353, $899. ISDN router is easy to use, but missing some features. *Mar 97, p. 70*

★★★/6.8 **WebTV Internet Terminal,** Sony, 888/772-7669, $349.95; $79.95 for keyboard. Expensive, easy-to-use Internet-connection device has nice interface. *May 97, p. 64*

MODEMS/NETWORKS

★★★★/8.8 **4-Sight Fax 4.0,** 4-Sight Technologies, 515/221-3000, $795 for ten users. Flexible, reliable faxing on your network. *Apr 97, p. 57*

★★★/6.5 **DataShuttle 256,** RNS, 805/968-4262, $1395. Card allows superfast, two-line ISDN file transfers. *Jun 97, p. 75*

★★★★/8.6 **InterJet,** Whistle Communications, 415/577-7000, $1995 to $2395. All-in-one hardware-and-software combo gets your office on the Internet. *Jun 97, p. 60*

★★/4.8 **MultiModemZDXV,** Multi-Tech Systems, 612/785-3500, $269. Expensive average-performing 33.6-Kbps modem, no Mac software. *Apr 97, p. 123*

★★★/5.3 **MV.34MA,** Boca Research, 561/997-6227, $236. Cheap 33.6-Kbps modem offers fast, easy internet hookup. *Apr 97, p. 123*

★★★★/8.3 **Network Server 700/200,** Apple Computer, 408/996-1010, $11,800. Server offers networking horsepower and high-speed I/O. *May 97, p. 54*

★★★/6.6 **Quicktel II-C 33X-ASP-C-M,** Logicode Technology, 805/383-2500, $319. Fast 33.6-Kbps modem with innovative design, but a bit expensive. *Apr 97, p. 123*

★★/4.5 **SmartLink 3334AV,** Archtek America, 818/912-9800, $209. Poorly performing, reasonably priced 33.6-Kbps modem. *Apr 97, p. 123*

★/2.7 **SmartOne 336FLXMac,** Best Data Products, 818/773-9600, $179. Inexpensive 33.6-Kbps modem is one of the slowest. *Apr 97, p. 123*

★★★★/7.1 **Sportster 28.8/33.6 Faxmodem,** U.S. Robotics, 847/676-7010, $179 (estimated price). Affordable 33.6-Kbps modem offers best performance. *Apr 97, p. 123.* **Editors' Choice** for best 33.6-Kbps fax modem.

★★★★/7.0 **Supra Simple Internet 33.6 1.0,** Diamond Multimedia, 360/604-1400, $159.95. Modem makes Internet access quick and easy. *Jan 97, p. 90*

★★★/6.7 **SupraSonic 336V+,** Diamond Multimedia Systems, 360/604-1400, $249 (estimated price). Full-featured 33.6-Kbps modem isn't cheap but is really fast. *Apr 97, p. 123*

★★★/6.5 **TelePort Internet Edition 33.6,** Global Village Communication, 408/523-1000, $169 (estimated price). Fast 33.6-Kbps modem includes flash ROM and CCL scripts. *Apr 97, p. 123*

★★★★/8.2 **Workgroup Server 8550/200,** Apple Computer, 408/996-1010, $4200. An affordable 200-MHz medium-duty Internet server that's easy to use. *May 97, p. 54*

★★/4.9 **Zoom V.34X Plus,** Zoom Telephonics, 617/423-1072, $199. Average-performing 33.6-Kbps modem with seven-year warranty. *Apr 97, p. 123*

PRINTERS

★★★/6.9 **Apple Color StyleWriter 1500,** Apple Computer, 408/996-1010, $249. Lackluster performance and image quality mark this color ink-jet. *Feb 97, p. 140*

★★★★/7.5 **Apple Color StyleWriter 2500,** Apple Computer, 408/996-1010, $349. Relatively fast color ink-jet has fair image quality. *Feb 97, p. 140*

★★★★/7.3 **BJC-4550,** Canon Computer Systems, 714/438-3000, $499. Ink-jet produces beautiful images with optional photo ink kit. *Feb 97, p. 140*

★★★/6.7 **Color LaserWriter 12/660 PS,** Apple Computer, 408/996-1010, $6100 (estimated). Lower price and more RAM than its predecessor, but still middle of the pack. *Jun 97, p. 56*

★★★/6.9 **DeskJet 1600CM,** Hewlett-Packard, 408/246-4300, $1999. Expensive ink-jet printer offers good speed and crisp text. *Feb 97, p. 140*

★★★★/7.8 **DeskJet 870Cse,** Hewlett-Packard, 408/246-4300, $599. Color ink-jet printer offers good speed and image quality. *Jun 97, p. 125*

★★★/5.9 **DeskWriter 600,** Hewlett-Packard, 408/246-4300, $199. Decent speed and average print quality at a nice price. *Feb 97, p. 140*

★★★★/7.2 **DeskWriter 680c,** Hewlett-Packard, 408/246-4300, $279. Color ink-jet offers above-average image quality. *Feb 97, p. 140*

★★★/6.9 **IBM Network Color Printer,** IBM, 404/238-1234, $8999. Its speed and output won't disappoint you, but it's not a good deal. *Jun 97, p. 56*

★★★/6.2 **LaserJet 5M,** Hewlett-Packard, 408/246-4300, $2229. Laser printer is easily upgraded and offers top-notch software. *Jun 97, p. 125*

★★★/6.0 **LaserJet 6MP,** Hewlett-Packard, 408/246-4300, $1149. Laser printer offers middling performance and excellent software. *Jun 97, p. 125*

★★★/6.0 **LaserWriter 12/640 PS,** Apple Computer, 408/996-1010, $1599. Laser printer has good speed and image quality for the price. *Jun 97, p. 125*

★★★/5.4 **MD-2010,** Alps Electric, 408/432-6000, $499. Low-end color printer is slow, with poor-quality output. *Feb 97, p. 140*

★★★/5.2 **Personal LaserWriter 4/600 PS,** Apple Computer, 408/996-1010, $899. This expensive laser printer is slow and has nonstandard memory. *Jun 97, p. 125*

★★★★/7.8 **Stylus Color 500,** Epson America, 310/782-0770, $279. Good price, output, and speed, but this color ink-jet is messy. *Feb 97, p. 140.* **Editors' Choice** for best home printer.

★★★★★/9.1 **Stylus Color 800,** Epson America, 310/782-0770, $449. Color ink-jet printer is fast with outstanding image quality. *Jun 97, p. 125.* **Editors' Choice** for best personal printer.

★★★/5.7 **TruPhoto,** Panasonic Interactive Media, 408/653-1888, $479.95. Digital photo printer offers instant snapshots, delayed gratification. *Apr 97, p. 64*

SCANNERS

★★★★/7.5 **Agfa StudioStar,** Agfa, 508/658-5600, $989. Graphics pros will treasure scanner's high-quality scans and powerful software. *Feb 97, p. 62*

★★/4.8 **Apple Color OneScanner 1200/30,** Apple Computer, 408/996-1010, $799. A big disappointment; offers little advantage over its lower-priced predecessor. *Feb 97, p. 62*

★★/3.3 **ArtiScan Z1-1200,** Tamarack Technologies, 714/744-3979, $699. Slow, unimpressive, noisy scanner can scan at 600 dpi and 30-bit. *Mar 97, p. 131*

★★/3.7 **ArtiScan Z1-600,** Tamarack Technologies, 714/744-3979, $499. Slow, unimpressive machine makes a rumbling noise while scanning. *Mar 97, p. 131*

★★★/5.1 **Color OneScanner 600/27,** Apple Computer, 408/996-1010, $549 (estimated). Sleek and compact, but can't compete with less-expensive models. *Mar 97, p. 131*

★★★★/8.4 **Epson Expression 636,** Epson America, 800/922-8911, $899 as tested. Low-cost color scanner gets the nod for all-around use. *Feb 97, p. 62*

★★/4.9 **HP ScanJet 5p,** Hewlett-Packard, 800/722-6538, $530. Attractive scanner marred by mediocre image quality and software. *Apr 97, p. 50*

★★/ 3.8 **ImageReader Elite,** Info, 408/538-2500, $399. Small, inexpensive scanner delivers mediocre performance. *Mar 97, p. 131*

★★/3.8 **ImageReader FB,** Info, 408/538-2500, $549. Painfully slow scanner with anemic software and awkward case design. *Mar 97, p. 131*

★★★★/7.1 **MCA S600C,** Mitsubishi Chemical America, 408/954-8484, $299. Document scanning gets colorized. *Jun 97, p. 78*

★★/3.8 **ScanAce II,** PacificImage Electronics, 310/214-5281, $899. Bulky scanner performed well in color, gray-scale, and resolution tests. *Mar 97, p. 131*

★★/4.9 **ScanJet 4P,** Hewlett-Packard, 208/323/2551, $615. Outstanding color fidelity, but large, heavy scanner has weak software. *Mar 97, p. 131*

★★/3.8 **ScanMaker E3,** Microtek Lab, 310/297-5000, $329 (estimated). Inexpensive, but disappointing speed, color, and gray-scale test results. *Mar 97, p. 131*

★★/3.7 **ScanMaker E6,** Microtek Lab, 310/297-5000, $599. 30-bit color, but otherwise no better than the ScanMaker E3. *Mar 97, p. 131*

★★★/5.9 **ScanTouch 110,** Nikon Electronic Imaging, 516/547-4355, $299 (estimated). A relatively fast scanner, with good color fidelity and an attractive price. *Mar 97, p. 131*

★★★/5.3 **ScanTouch 210,** Nikon Electronic Imaging, 516/547-4355, $699 (estimated). Slower and more expensive than the ScanTouch 110, but 600 dpi. *Mar 97, p. 131*

★★★★/7.1 **SilverScanner Pro,** La Cie, 503/520-9000, $499. Great low-cost scanner with compact design and good software. *Mar 97, p. 131.* **Editors' Choice** for best low-end scanners.

★★★/6.9 **SnapScan,** Agfa, 508/658-5600, $389 (estimated). Quiet, fast scanner has good scanning software. *Mar 97, p. 131*

★★★/6.6 **Vista-S12E,** Umax Technologies, 510/651-4000, $649. Fast, with minimal image noise, but the Vista S-6E is a better choice. *Mar 97, p. 131*

★★★★/8.4 **Vista-S6E,** Umax Technologies, 510/651-4000, $345 (estimated). Inexpensive scanner did well on most of our tests, has good software. *Mar 97, p. 131.* **Editors' Choice** for best low-end scanners.

STORAGE

★★★/5.7 **APS Q3200,** APS Technologies, 816/483-1600, $400 to $480. At 5400 rpm, this 3GB hard drive is not fast, but it is nicely priced. *May 97, p. 127*

★★★/6.4 **Barracuda 4LP,** Club Mac, 714/768-8130, $789 to $849. An ordinary-looking case masks a 7200-rpm, 2GB drive that screams. *May 97, p. 127*

★★★/5.7 **D2,** La Cie, 503/520-9000, $399. 2GB hard drive with some thoughtful touches is average speed. *May 97, p. 127*

★★★/6.5 **DCS 2150,** Direct Connections, 612/937-6283, $825. 2GB drive is a speed demon, whether connected internally or externally. *May 97, p. 127*

★★★/5.7 **DisKovery,** Optima Technology, 714/476-0515, $560. 2GB hard drive is an easy all-in-one solution. *May 97, p. 127*

★★★/5.4 **Fireball TM 21,** Quantum, 408/894-4000, $320. 2GB, 5400-rpm hard drive with clear installation instructions. *May 97, p. 127*

★★★/5.7 **Fireball TM 32,** Quantum, 408/894-4000, $433. 3GB, 5400-rpm internal hard drive with clear installation instructions. *May 97, p. 127*

★★★/6.1 **Hammer 2050iS Ultra,** StreamLogic, 818/701-8400, $919. Great performance, but pricey for a 2GB internal drive. *May 97, p. 127*

★★★/6.0 **PDI 2100WAV**, ProDirect, 612/941-1805, $699. 2GB drive is fast with a SCSI card, but average on the external bus. *May 97, p. 127*

★★★★/7.5 **PDI 3800**, ProDirect, 612/941-1805, $899. Big, fast, nicely priced 3.8GB hard drive. *May 97, p. 127.* **Editors' Choice** for best 2GB to 3GB hard drives.

★★★/6.1 **Seagate ST32171W**, Seagate, 408/438-6550, NP. An OEM drive tested for comparison, this 7200 rpm drive is fast. *May 97, p. 127*

★★★★/7.6 **SyJet**, SyQuest, 510/226-4000, $399 to $499 . Removable media drive that's faster than Jaz; easy setup. *May 97, p. 51*

★★★/5.2 **Tempest 3.2**, Club Mac, 714/768-8130, $399 to $459. 5400-rpm, 3GB drive that pales next to the competition. *May 97, p. 127*

★★★/5.9 **Tsunami**, La Cie, 503/520-9000, $499. Snazzy case, but 3GB hard drive's not that fast. *May 97, p. 127*

VIDEO/DISPLAY

★★★/6.3 **Diamond Pro 91TXM**, Mitsubishi Electronics America, 714/220-2500, $1699. Pricey for an average product, with below-average image quality. *Jan 97, p. 125*

★★★/6.1 **G200**, IBM, 914/766-1900, $1469. Easy to use, but below-average image quality. *Jan 97, p. 125*

★★★★/7.6 **G810**, ViewSonic, 909/869-7976, $1595. A great price for a top pick in both usability and image quality. *Jan 97, p. 125.* **Editors' Choice** for best two-page monitors.

★★★/6.7 **Multigraph 445Xi**, Nokia Display Products, 415/331-4244, $1899. A little pricey for a monitor that offers only medium image quality. *Jan 97, p. 125*

★★★/6.7 **Multiple Scan 20**, Apple Computer, 408/996-1010, $2149. Good overall image quality, but pricey for its category. *Jan 97, p. 125*

★★★/6.6 **MX21F-M**, Mag InnoVision, 714/751-2008, $1699. Average price for average usability and image-quality scores. *Jan 97, p. 125*

★★/4.7 **P201**, IBM, 914/766-1900, $2635. Poor image quality and hard to use. *Jan 97, p. 125*

★★★/6.2 **PanaSync S21**, Panasonic, 201/348-7000, $1899. Good controls, but a little expensive for below-average image quality. *Jan 97, p. 125*

★★★/5.8 **PrecisionView 21**, Radius, 408/541-6100, $2749. Overpriced for only average test scores and a one-year warranty. *Jan 97, p. 125*

★★★/6.9 **Pro P810**, ViewSonic, 909/869-7976, $1745. Superb image quality, but costlier than its sibling, the G810. *Jan 97, p. 125*

★★★★/7.4 **RasterOps SuperScan Mc20**, Hitachi NSA, 617/461-8300, $1599. Good bargain for an overall good performer. *Jan 97, p. 125*

★★★/6.6 **RasterOps SuperScan Mc801HR**, Hitachi NSA, 617/461-8300, $2199. A bit costly for only above-average image quality, mediocre controls. *Jan 97, p. 125*

★★★★/8.9 **Sony GDM-W900**, Sony Electronics, 408/955-5142, $4999. A wide-screen monitor for the color connoisseur. *Jun 97, p. 84*

★★★/6.4 **SyncMaster 21 GLs**, Samsung Electronic America, 201/971-0400, $1959. Expensive unit for overall average performance. *Jan 97, p. 125*

★★★/5.6 **Ultra 20-M**, Princeton Graphic Systems, 714/751-8405, $1249. Inexpensive, but you get what you pay for—not high quality. *Jan 97, p. 125*

★★★/6.4 **VisionMaster 21**, Iiyama North America, 215/957-6543, $1945. Overall, a good unit, but not good enough to justify the price. *Jan 97, p. 125*

★★★★/8.3 **VisionMaster Pro 21**, Iiyama North America, 215/957-6543, $1995. Top overall image quality with clear on-screen controls. *Jan 97, p. 125.* **Editors' Choice** for best two-page monitors. m

Buy smart with Mac Superguide.

MACWORLD SUPERGUIDE

To buy smart when you're choosing a Mac OS computer, your best bet is to let Macworld be your guide. Check out the Mac Superguide in this issue — and every issue — for the latest and greatest in Mac systems. It's a comprehensive guide to every system on the market, meticulously reviewed and Star Rated, with our favorites highlighted with an Editors' Choice symbol.

With all the systems out there, you could easily get lost if you try to navigate them on your own. Don't risk it; trust the Superguide.

Mac Superguide

MACWORLD SELECTS THE BEST MAC OS SYSTEMS

Edited by Allyson Bates

Looking for a new Macintosh? Confused about what new model to buy? Look no further. Each month, the *Mac Superguide* provides *Macworld*'s picks for the best Mac OS systems. Typically we recommend an Editors' Choice winner and two runners-up. Current recommendations, however, may have changed from last month's based on the present lineup and price changes.

You'll also find *Macworld* Star Ratings and Macworld Lab performance benchmarks for all Mac OS systems shipping as we went to press in late April 1997. You may read about other Mac models in *Macworld* and elsewhere, but those are prototypes not yet available—the only systems rated here are those you can actually buy.

For previously reviewed Mac systems, the summaries reference the issue date and page number of the article. In some cases, such as faster versions of existing Macs, there is no full review and thus no cross-reference. New systems are indicated in the benchmark by the ▶ icon.

Prices from Apple, Motorola, DayStar, and Umax are company-estimated street prices. APS, Power Computing, and PowerTools sell direct. Unless otherwise noted, all pricing includes a keyboard and mouse, but not a monitor or modem.

For price comparisons, estimate spending about $800 for a 17-inch monitor, $175 for a modem, $100 for an extended keyboard, $50 for a mouse, $400 for a 2GB hard drive, $175 for 2MB of VRAM, and $100 for 16MB of RAM.

OFFICE SYSTEM

EDITORS' CHOICE

★★★★/7.3 **Power Macintosh 7300/180** Apple's new desktop finally does it right: strong performance, competitive price, easy expansion, and no unneeded extras. It's nice to see Apple has learned the value lessons that the clone competition has been trying to teach—a great buy if you want the most bang for your buck. Apple Computer (408/996-1010): $2399, 16MB RAM, 256K cache, 2MB VRAM (4MB maximum), 2.0GB hard drive, 12× CD, 1 free drive bay, 3 PCI slots. *May 97, p. 100*

★★★★/7.1 **SuperMac J700/180** Similar to Apple's Power Mac 7300/180, the J700/180 distinguishes itself by offering one more PCI slot and one more free drive bay, plus it has more cache than the 7300. But it costs more than the 7300. Umax Computer (510/226-6886): $2499, 16MB RAM, 512K cache, 2MB VRAM (4MB maximum), 2.1GB hard drive, 8× CD, 2 free drive bays, 4 PCI slots. *May 97, p. 100*

★★★★/7.0 **PowerCenter 150** This soon-to-be-discontinued tower is competitively priced, plus it is more expandable than Apple's Power Mac 7300/180. Power Computing's PowerCenter 150 tower is an ideal general-purpose office Mac for people on a budget. Power Computing (512/388-6868): $1495, 16MB RAM, 512K cache, 2MB VRAM (4MB maximum), 1.0GB hard drive, 12× CD, 3 free drive bays, 3 PCI slots. A desktop version with no free drive bays costs $1695. *May 97, p. 100*

Umax's SuperMac J700/180 is a fast office Mac with room for upgrades.

PORTABLE SYSTEM

EDITORS' CHOICE

★★★★/7.6 **PowerBook 3400c/200** The new 3400c/200 is almost twice as fast as a top-of-the-line Pentium portable yet costs just $500 more. A built-in modem and Ethernet port eliminates an expensive PC Card modem/Ethernet combo. However, the 3400c isn't perfect: it doesn't support multiple monitors, and its CPU isn't upgradable. And the high price puts it out of reach for many people. Apple Computer (408/996-1010): $5495, 16MB RAM, 2.0GB hard drive, 6× CD, 12.1-inch active matrix LCD, 1 drive bay, 2 PC Card slots. *May 97, p. 50*

★★★/6.4 **PowerBook 1400cs/117** Apple's midrange notebook accommodates an optional CD-ROM drive. Recent price cuts make this a great buy and a better system than the old 5300 series. The large LCD panel is nice, even though it's passive matrix. Apple Computer (408/996-1010): $2000, 12MB RAM, 750MB hard drive, optional 6× CD, 11.3-inch passive matrix LCD, 1 drive bay, 2 PC Card slots ($3500 model 1400c/117 has active matrix LCD and 1.0GB hard drive). *Jan 97, p. 58*

SMALL-OFFICE/HOME-OFFICE SYSTEM

EDITORS' CHOICE

★★★★/7.4 **PowerBase 200** Pro-level performance that costs less than Apple's Performa 6400/200, plus a strong selection of features and greater expansion capability, make this tower system a great buy for consultants and small businesses. Power Computing (512/388-6868): $1495, 16MB RAM, 256K cache, 2MB VRAM (4MB maximum), 1.2GB hard drive, 8× CD, 3 free drive bays, 3 PCI slots. *May 97, p. 100*

★★★★/7.1 **Performa 6400/200** An affordable, good performer with limited internal expansion. It has a unique TV tuner slot. Apple Computer (408/996-1010): $1799, 16MB RAM, 256K cache, 1MB VRAM (1MB maximum), 2.4GB drive, 8× CD, 1 free drive bay, two 7-inch PCI slots, TV/FM tuner slot, 28.8-Kbps modem. *May 97, p. 100*

Apple's recent price drops make the midrange PowerBook 1400cs/117 an even better portable option.

EDUCATION SYSTEM

EDITORS' CHOICE

★★★★/7.4 **PowerBase 180** It's fast, cheap, and expandable, with 3-D video acceleration. This tower is a great buy for cash-strapped schools and students. Power Computing (512/388-6868): $1295, 16MB RAM, 256K cache, 2MB VRAM (4MB maximum), 1.2GB hard drive, 8× CD, 3 free drive bays, 3 PCI slots. *May 97, p. 100*

EDITORS' CHOICE

★★★★/7.1 **Power Macintosh 5400/180** This all-in-one Mac—available only to schools—eliminates the need for cables. Rich in features—including a good monitor—and moderate in speed, the 5400 is a good classroom Mac. Apple Computer (408/996-1010): $1999, 16MB RAM, 1MB VRAM (1MB maximum), 1.6GB hard drive, 8× CD, no free drive bays, 7-inch PCI slot, TV/FM tuner slot, Ethernet card, internal stereo speakers, monitor included. *May 97, p. 100*

REAL PRODUCTS REAL RATINGS Reviews you can trust: Unlike other publications, Macworld rates only final shipping products, not prototypes. What we review is what you can actually buy.
Outstanding ★★★★★ = 9.0–10.0 Very Good ★★★★ = 7.0–8.9 Good ★★★ = 5.0–6.9 Flawed ★★ = 3.0–4.9 Unacceptable ★ = 0–2.9

PHOTOGRAPHS BY KEVIN CANDLAND

IMAGE-EDITING AND 3-D GRAPHICS SYSTEM

EDITORS' CHOICE

★★★★/8.2 **PowerTower Pro 225** This expandable tower is ideal for all-around image editing and 3-D graphics. Although a multiprocessor-based Mac is faster for certain key operations, the PowerTower Pro 225 is faster and cheaper. Power Computing (512/388-6868): $3695, 32MB RAM, 1MB cache, 8MB VRAM (8MB maximum), 2.0GB hard drive, 16× CD, 6 free drive bays, 6 PCI slots. *Jun 97, p. 108*

EDITORS' CHOICE

★★★★/7.5 **Genesis LT 400+** The new, affordable LT 400+ is swift in multiprocessor (MP)-enabled programs, Photoshop users who use MP-accelerated filters all day will love it. DayStar Digital (770/967-2077): $4999, 32MB RAM, 512K cache, 4MB VRAM (4MB maximum), 2.0GB hard drive, 16× CD, 2 free drive bays, 6 PCI slots. *Jan 97, p. 108*

★★★★/7.5 **Genesis MP 800+** The ultimate Mac system speeds through multiprocessor (MP)–enabled programs such as Adobe Photoshop and Strata Studio Pro Blitz. And the tower leaves room for everything you might need. DayStar Digital (770/967-2077): $10,818, 32MB RAM, 512K cache, 4MB VRAM (4MB maximum), 2.0GB hard drive, 16× CD, 7 free drive bays, 6 PCI slots. *Jun 97, p. 108*

PUBLISHING AND DESIGN SYSTEM

EDITORS' CHOICE

★★★★/8.2 **PowerTower Pro 225** The fastest single-CPU Mac is the best for publishing pros—at a low price. Power Computing (512/388-6868): $3695, 32MB RAM, 1MB cache, 8MB VRAM (8MB maximum), 2.0GB hard drive, 16× CD, 6 free drive bays, 6 PCI slots. *Jun 97, p. 108*

EDITORS' CHOICE

★★★★/8.0 **SuperMac S900/225** Nearly as fast as the PowerTower Pro 225, but with fewer free drive bays. The S900/225 is a solid second choice. Umax Computer (510/226-6886): $3699, 32MB RAM, 512K cache, 8MB VRAM (8MB maximum), 2.1GB hard drive, 8× CD, 4 free drive bays, 6 PCI slots. *Jun 97, p. 108*

★★★★/7.9 **PowerTower Pro 200** Publishing pros will love this computer from Power Computing. And for $500 less than a similar PowerTower Pro 225, it's a much better price/performance deal.

Power Computing's PowerTower Pro 225 is an affordable Mac that offers top-notch performance.

Power Computing (512/388-6868): $3195, 32MB RAM, 1MB cache, 8MB VRAM (8MB maximum), 2.0GB hard drive, 16× CD, 6 free drive bays, 6 PCI slots. *Jun 97, p. 108*

MULTIMEDIA AND VIDEO CREATION SYSTEM

EDITORS' CHOICE

★★★★/7.5 **Genesis MP 800+** The ultimate Mac speeds through multiprocessor (MP)–enabled programs such as Adobe Premiere. Its expandable tower case holds many drives. DayStar Digital (770/967-2077): $10,818, 32MB RAM, 512K cache, 4MB VRAM (4MB maximum), 2.0GB hard drive, 16× CD, 7 free drive bays, 6 PCI slots. *Jun 97, p. 108*

WEB AND INTRANET SERVER SYSTEM

EDITORS' CHOICE

★★★★/7.9 **PowerTower Pro 200** The second-fastest single-CPU Macintosh is great for Web serving at an attractive price. Power Computing (512/388-6868): $3195, 32MB RAM, 1MB cache, 8MB VRAM (8MB maximum), 2.0GB hard drive, 16× CD, 6 free drive bays, 6 PCI slots. *Jun 97, p. 108*

EDITORS' CHOICE

★★★★/7.8 **SuperMac S900/200** This speedy machine has plenty of expansion opportunities. The combination of fast performance and free drive bays make this computer a great choice for someone shopping around for a departmental or Web server. Umax Computer (510/226-6886): $3299, 32MB RAM, 512K cache, 4MB VRAM (4MB maximum), 2.1GB hard drive, 8× CD, 4 free drive bays, 6 PCI slots. *Jun 97, p. 108* m

Macworld LAB TEST

Every Shipping Mac Tested and Rated

▶ New this issue. Editors' Choice winners in red. Longer bars are better. Core results are times as fast as a Centris 650 (Centris 650 = 1.0). Multiprocessor results are times as fast as a Power Mac 9500/150 (9500 = 1.0). Only shipping systems are tested and rated.

	Core Mac Performance	Star Rating*
Apple Computer		
Performa 6360	4.0	★★★/5.3
Performa 6400/180	4.0	★★★/6.8
Performa 6400/200	5.6	★★★★/7.1
PowerBook 1400c/117**	2.7	★★★/6.4
PowerBook 1400cs/117**	2.8	★★★/6.4
PowerBook 1400c/133	3.5	★★★/6.6
▶ PowerBook 3400c/180	5.0	★★★★/7.4
PowerBook 3400c/200	5.5	★★★★/7.6
Power Macintosh 4400/200	5.5	★★★/6.5
Power Macintosh 5260/120***	2.6	★★★/5.5
Power Macintosh 5400/180***	4.3	★★★★/7.1
Power Macintosh 6400/200***	4.5	★★★/6.4
Power Macintosh 7300/180	7.2	★★★★/7.3
Power Macintosh 7300/200	7.7	★★★★/7.6
Power Macintosh 9600/200	8.1	★★★★/8.0
APS Technologies		
MPower 603e180	4.5	★★★/6.4
MPower 603e200	5.7	★★★/6.7
MPower 603e240	6.6	★★★/6.9
MPower 604e200	7.3	★★★/6.7
DayStar Digital		
Genesis LT 400+	7.7	★★★★/7.5
Genesis MP 400+	7.7	★★★★/7.5
Genesis MP 720+	7.3	★★★★/7.4
Genesis MP 800+	7.8	★★★★/7.5
Motorola Computer Group		
StarMax 3000 DT603e-180	5.4	★★★/6.2
StarMax 3000 MT603e-180	5.4	★★★/6.2
StarMax 3000 DT603e-200	5.8	★★★/6.5
StarMax 3000 MT603e-200	5.8	★★★/6.5
StarMax 3000 MT603e-240	6.8	★★★/6.8
StarMax 4000 DT604e-160	6.6	★★★/6.7
StarMax 4000 MT604e-160	6.9	★★★/6.7
StarMax 4000 DT604e-200	7.7	★★★/6.7
StarMax 4000 MT604e-200	7.7	★★★/6.7
Power Computing		
PowerBase 180	5.4	★★★★/7.4
PowerBase 200	5.8	★★★★/7.4
PowerBase 240	6.4	★★★★/7.7
PowerCenter 150	5.6	★★★★/7.0
PowerTower Pro 200	8.5	★★★★/7.9
PowerTower Pro 225	9.2	★★★★/8.2
PowerTools		
Infiniti 4200 Pro	8.2	★★★/6.9
Umax Computer		
SuperMac C500/180	5.2	★★★/5.9
SuperMac C600/200	5.8	★★★/6.2
SuperMac C600/240	6.3	★★★/6.5
SuperMac J700/180	7.3	★★★★/7.1
SuperMac S900/180DP	6.7	★★★★/7.1
SuperMac S900/200	8.3	★★★★/7.8
SuperMac S900/200DP	7.3	★★★★/7.3
SuperMac S900/225	8.8	★★★★/8.0

	Multiprocessor Performance	Star Rating*
DayStar Genesis LT 400+	2.1	★★★★/7.5
DayStar Genesis MP 400+	2.1	★★★★/7.5
DayStar Genesis MP 720+	2.6	★★★★/7.4
DayStar Genesis MP 800+	2.8	★★★★/7.5
SuperMac S900/180DP	1.8	★★★★/7.1
SuperMac S900/200DP	2.0	★★★★/7.3

*Based on features, implementation, innovation, performance, reliability, ease of use, and value. (See Star Ratings section for full explanation.) **Had less than 32MB of RAM, so some tests were conducted with virtual memory, which slows performance. ***Available only to educational institutions.

LACIE
LIMITED

your trusted storage source, and now a lot more...

Advanced aperture grille technology provides a uniform, brighter image with a more accurate color display.

0.28mm dot pitch provides superior image detail with negligible distortion, significantly decreasing eye strain.

1600 x 1200 pixels at 75 Hz maximum resolution provides flicker-free detail for precise image viewing and manipulation.

Diamondtron™ technology maintains 40% greater sharpness on the picture perimeter, delivering unsurpassed edge to edge focus.

21" tube with expansive 19.7" diagonal viewing area accommodates 2 page spreads for prepress and design work.

Quality optics and anti-glare/anti-static coatings assure that the **electron21** will retain its amazing image quality for years of continual use.

28 on-screen image controls accessed via a front-mounted control panel – includes one-touch auto calibration and moire cancellation.

Macworld TEST CENTRE

MacUser Best Buy

multiple choices

Powerful multimedia applications and faster processors can put the squeeze on yesterdays' storage and display products. Don't let your computer hold you back.

La Cie Limited makes it easy to expand your system's productivity with a multitude of great products. Our **electron21** color monitor, 36 bit color **silverscanner IV** and our award-winning **d2** hard drives and CD-Recordables are designed with a wealth of superior features to make them the best in the business.

La Cie Limited products are engineered to give peak performance as you fit the pieces together

Rugged, all-steel case design is shock-resistant for maximum protection of your valuable data.

Award-winning La Cie Limited **d2** hard drives are at the top of their class for high performance in 2GB to 9GB capacities.

Versatile La Cie Limited **d2** Jaz drives offer easy transfers of 1GB files within an office or to outside service bureaus.

La Cie Limited **d2** DAT drives are the value leaders for archiving and the best solution for your backup storage needs.

The choice of designers and pre-press professionals, La Cie Limited **d2** 4X/6X CD-Recorders are great for inexpensive file distribution.

Includes La Cie Limited Storage Utilities with acclaimed Silverlining™ disk management software, a $99 value... FREE.

Shipped ready for immediate "plug and play" operation as a stand-alone drive or in a space saving stack.

...we fit the pieces together for digital video, multi-media, pre-press and more.

for multimedia

in your unique configuration. Like you, we are after perfect results. That's what has made us the choice of more than 750,000 users for over a decade.

These great products are available right now in hundreds of leading computer reseller outlets across the country and in top mail order catalogs. Power up to the challenge of multimedia.

The choice is yours. The choice is easy. The choice is La Cie Limited.

LACIE LIMITED

8700 SW Creekside Place, Beaverton, OR 97008
Tel: 503 520-9000 • Fax: 503 520-5508
http://www.lacie.com
Circle 52 on reader service card

Move over, Intel—the fastest Macs now outrun the fastest PCs

The Mac Wins The Race

Macworld LAB TEST

by Lon Poole and Howard Baldwin

SONNY BONO WINS A SEAT IN CONGRESS. CHER WINS AN Oscar. Macs win a performance test against PCs. All unthinkable at one time, perhaps, but true today. For years, Macintosh users have had to shrug off the PC's proficiency in speed by insisting they had the better interface. No more. Based on Macworld Lab tests of state-of-the-art representatives from both platforms, the Mac finally comes out ahead. Let loose the balloons.

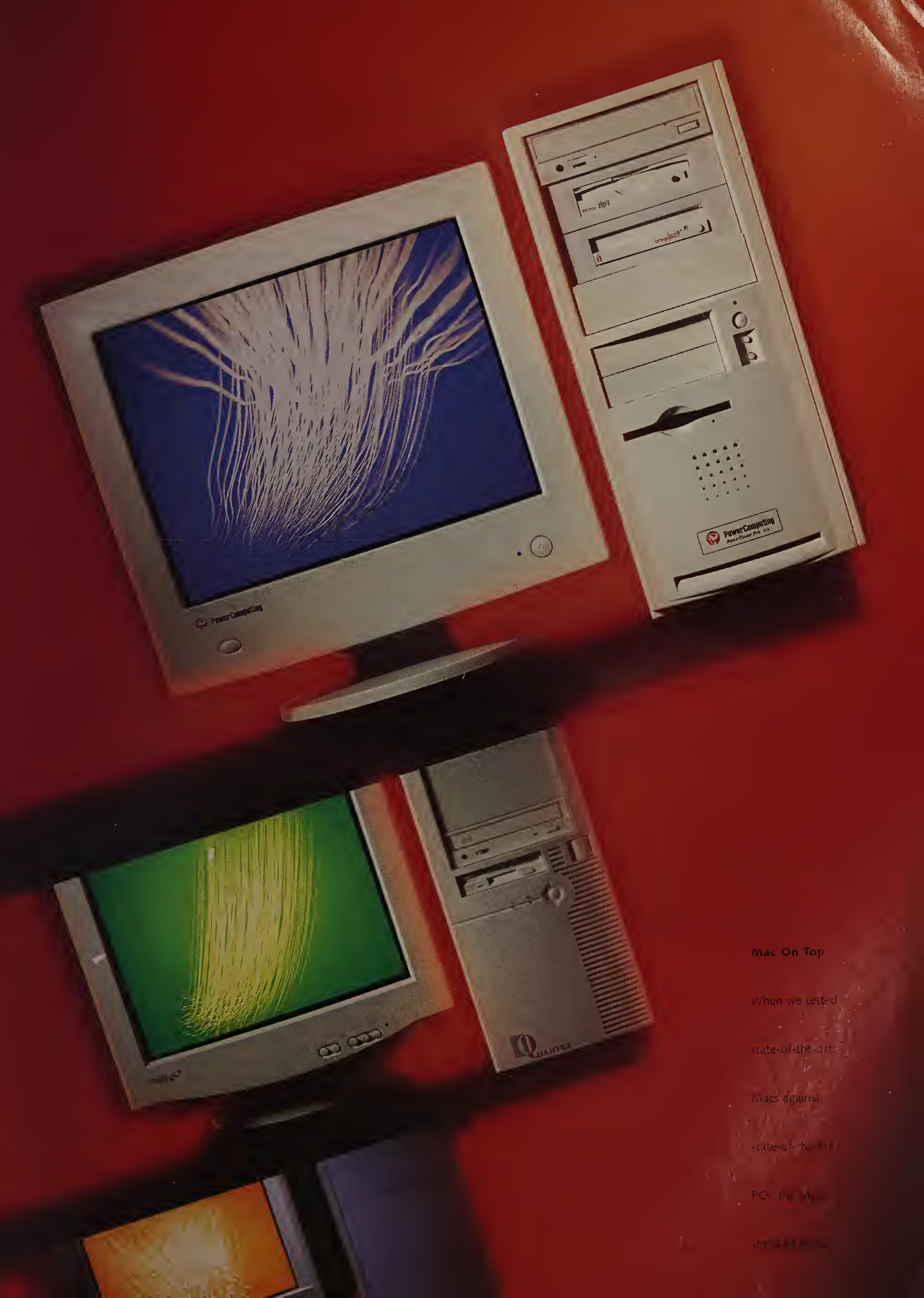
Macintosh users have been waiting for this for a long time, and we really have Intel to thank. If it hadn't developed its new MMX technology to boost graphics speed, and launched a snappy ad campaign to make you think it was going to sweep the Mac off your desktop and into the dump, we might not have thought to pit the two platforms against each other this way. We're here to say: Not so fast, Intel. And they say advertising doesn't get results.

Macworld Lab tested 11 applications common to both platforms, and the results show that in a duel of graphics, the Mac still draws blood. In video tests, the Mac still draws pixels faster. Unfortunately, it's not all good news—sometimes system and application software cripple the Mac so severely it might as well be drawing Social Security. Nor do we yet have parity in price. Nobody's perfect.

Anyone who's worked with Macs for any length of time knows about their strengths and weaknesses. Based on these test results, though, the Mac has nothing to fear and nothing to hide. Best of all, this is just the beginning. The technologies that are boosting the Macs' performance are only going to ratchet to higher and higher speeds in the coming months. If you show this to the sneering folks who dwell in the PC universe, they're going to have to draw some new conclusions.

Common Programs, Uncommon Results

First, take a look at the state-of-the-art hardware we tested. On the PC side were a PCV-120 from Sony (*http://www.sony.com*) running Windows 95 on a 200MHz MMX-enabled Pentium, and a QP6/200 SM-4 from Quantex (*http://www.quantex.com*) running Windows NT 4.0 on a 200MHz Pentium Pro (we also tested, but didn't other-



Mac On Top

When we tested

state-of-the-art

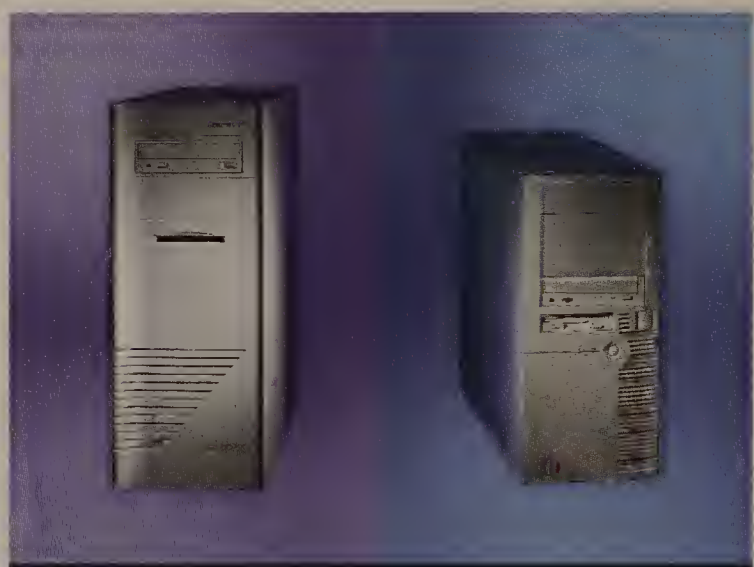
Macs against

state-of-the-art

PCs the Mac

wise evaluate, a prototype CLR Infinity PTK-5A system from CompuLink (954/450-7061, *http://www.clrusa.com)* running Windows NT on a prerelease 233MHz MMX-enabled Pentium Pro).

On the Mac side, we tested our Editors' Choice for image editing and publishing, a PowerTower Pro 225 from Power Computing (*http://www.powercc.com*); a four-processor, top-of-the-line Genesis MP 800+ from DayStar Digital (*http://www.daystar.com*); and one of the fastest Macs that's come through the door of Macworld Lab, a prototype of the SuperMac S900/250 from Umax Computer (408/327-8700, *http://www.supermac.com*), all running Mac OS 7.6 and using PowerPC 604e CPUs (for prices and specifications of the shipping computers, see the table, "Contenders: The Top Macs and PCs Compared").



PCS ARE STILL CHEAPER

The top-of-the-line multiprocessor 200MHz DayStar Digital Genesis MP 800+ (left) will cost $10,580, not including the applications specifically optimized to take advantage of its power. We tested a prototype Umax SuperMac S900/250 (not shown), and its cost was $5279. A similarly configured system from Quantex Microsystems (right), the 200MHz Pentium Pro–based QP6/200 SM-4, cost only $2929.

ROBERT CARDIN

State-of-the-art Mac hardware is not limited to the desktop—Apple's latest laptop, the 240MHz PowerBook 3400, is no slouch, either (see the sidebar "Portables Are Back with a Vengeance").

Because MMX shines a spotlight on graphics and multimedia, we chose to test software that emphasizes image editing, 3-D animation, and desktop video—all purported MMX strengths. These packages included Adobe Photoshop 4.0, Premiere 4.2, and PageMaker 6.5; Fractal De-sign Painter 4.0 and Ray Dream Designer 4.0; Macromedia FreeHand 7 and Extreme 3-D 2.0; and Specular Infini-D 3.5. We rounded out the tests with Wolfram Research Mathematica 3.0, and with the business software Microsoft Excel 5.0 and Claris FileMaker Pro 3.0.

We installed 64MB of RAM in all the test computers. On the PCs, Windows dynamically allocates RAM as needed to the running application. Since the Mac OS allocates a fixed amount of memory to each application (a technique we abhor), we leveled the field by setting the memory size of every tested Mac application to 42MB (50MB for Photoshop to give it as much memory as possible), leaving the rest of the 64MB for system software.

Even though we started out comparing CPU with CPU, it's not just the PowerPC CPU that makes the Mac fast. Cache, RAM, hard drive, and video capability all play a part. Depending on the applications you use, you probably stress different parts of your Mac, so there's something positive here for almost everyone. We'll look at various applications—graphics, publishing, multimedia, and business—to see where you're most likely to see a performance boost, and where you won't (for test results, see the benchmark, "The Proof: Fast Macs Outperform Fast PCs").

Gargantuan in Graphics

If you're working with the top graphics applications, whether image editing or 3-D animation, you'll see spectacular performance on the Mac, thanks to the floating-point strengths of its RISC-based CPU running at 250MHz (the fastest PCs run at only 200MHz). The 604e achieves its best performance when it's executing a steady stream of both floating-point and integer instructions. The amount of cache built into the Macs helps, too.

When we tested FreeHand and Painter, the SuperMac S900/250 came out ahead in almost every single operation. In Photoshop tests it was second only to the four-processor Genesis MP 800+, which was running an optimized version of Photoshop (more about programs optimized for multiprocessing or MMX later). The Genesis benchmark score is hampered by the other two applications in the test.

The Cache Advantage When it comes to cache, which contains a copy of the most recently used RAM contents, more is always better, whether it's internal to the CPU (look for *L1* on your system's spec sheets) or external to the CPU (look for *L2* on your spec sheets). Each of the systems we tested has two internal caches (a data cache and an instruction cache) in its CPU, but they were 32K each in the PowerPC 604e-based Macs, while they were 16K each in the Pentium MMX–based Sony PCV-120 and 8K each in the Pentium Pro–based Quantex QP6/200 SM-4.

High-performance Macs and PCs include beefed-up external cache as well. The external cache is slower than the internal cache, but it is still a lot faster than RAM. External cache makes a big difference when you do a lot of image editing or other work that uses big chunks of data. Take what happened in the tests with Painter: the PowerTower Pro 225 kept up with the SuperMac S900/250, even though the latter has a faster CPU, because the PowerTower Pro 225 has 1MB of external cache, compared with 512K on the SuperMac S900/250. The Genesis MP 800+ and Quantex QP6/200 SM-4 also have a 512K external cache, while the Sony PCV-120 has 256K.

Bus Potential This brings up an interesting anomaly about the Macintosh in relation to the PC. In general, Macs use slower system buses than PCs do: most Macintosh buses are between 40MHz and 50MHz, while most PC buses are 66MHz.

Both Macs and Pentium PCs access the external cache (and their RAM, for that matter) through the system bus at speeds that are a fraction of the CPU's megahertz rating—about one-third on the tested PCs and one-fifth on the tested Macs. For example, the 250MHz SuperMac S900/250 has a 50MHz bus and the 225MHz PowerTower Pro 225 has a 45MHz bus, while the 200MHz PCV-120 has a 66MHz bus.

Pentium Pro–based PCs are different. The Pentium Pro includes the external cache in the same chip module that holds the CPU, and data travels to and from the self-contained external cache at the Pentium Pro CPU's full speed of 200MHz.

with the 200MHz maximum in current Pentiums), and it is more efficient (so it can outdo even a same-speed Pentium in most calculations). Intel is coming out with faster Pentiums and Pentium Pros, of course, but IBM and Motorola are upping the ante with even faster PowerPC 604e's and a new PowerPC code-named the G3. (For more information on the G3, see "First CHRP System Is Stingingly Fast," *News*, *Macworld*, June 1997.)

Later this year, look for new Macs to get faster buses, which will unleash even more of the PowerPC's raw power. (For more details, see the sidebar "How New Macs Will Widen the Performance Gap.")

Is My Program Optimized?

Another factor that will affect your Mac's performance is whether your software has been optimized for the platform you use. For instance, the four-processor Genesis MP 800+ sparkled when it came to testing Photoshop

Portables Are Back with a Vengeance

At the same time as the Mac is racing past PCs on the desktop, Apple is staging a resurgence in the laptop market.

For a long time, if you wanted the fastest laptop, you had to buy an Intel-based system. (Heck, after the 5300 fiasco, if you wanted any laptop, you had to go with Intel; even Steve Jobs reputedly bought an IBM ThinkPad for his daughter Lisa when she went off to college.)

Now if you want to buy the fastest laptop on the market, there won't be an Intel CPU inside. It'll be the 240MHz PowerPC 603e in the PowerBook 3400 (see "PowerBook with a Punch," April 1997, and *Reviews*, May 1997). Even now, several months later, there are no faster Intel-based portable PCs on the market. (Unfortunately, Apple is still experiencing some quality problems with the 3400's internal memory coming loose.)

ROBERT CARDIN

PowerBook Power The new PowerBook 3400 is giving Intel-based laptops a run for their money in terms of performance.

For benchmark comparisons, we pitted the 3400 against a 150MHz Compaq LTE 5400, the fastest shipping laptop we could find. As might be expected, the PowerBook clobbered the competition in every arena except disk-intensive operations. There it was hampered by the Mac OS's inefficient I/O subsystem.

Although Apple continues to insist it will not license PowerBook clones, we'd love to see that happen. With the same kind of competitive spirit that's spurring the desktop Mac market applied to laptops, we'd be seeing some snappy, snazzy portables before long.—HOWARD BALDWIN

How the Mac Wins A CPU operating at several times the bus speed could spend a lot of time waiting to read or write data rather than processing it. Such an unbalanced system would be inefficient, and you wouldn't get the performance boost you expect from a really fast CPU. Given this architecture, the Mac should be generally *slower* than the PC, but it's not. Another factor is that the Mac OS is generally less efficient than the Windows OS, since much of the Mac OS is still 680X0 code that runs in emulation on a Power Mac. So why isn't the Macintosh generally slower than the PC?

The reason is that the PowerPC 604e CPU is so powerful, compared with Intel's Pentium and Pentium Pro, that it overcomes the Mac's bus and OS limits. Macworld Lab found that the 604 achieved rough parity with the Pentium but the 604e blasted past it, in two areas: the 604e runs at faster raw speeds (up to 250MHz, compared

because we used a version of the software optimized for multiprocessing. On other applications, the Genesis MP 800+ didn't do as well.

The trouble is, multiprocessing under Mac OS 7.6 is effective only in operations that have been enhanced specifically for multiprocessing. All other operations use one CPU, and the overhead of the current Mac OS multiprocessing software slows single-CPU performance by about 10 percent. In effect, the MP 800+ performed like a Mac with one 180MHz 604e—rather than the 200MHz 604e it actually has to do the work—in all our tests except those involving Photoshop.

Apple's forthcoming Rhapsody operating system, the final version of which is due in mid-1998, is supposed to eliminate the overhead with symmetrical multiprocessing, but only for programs running under its OpenStep component—Mac OS programs will continue to

have the multiprocessing-overhead slowdown.

On the PC side, optimization is also an issue. Are MMX's much touted multimedia extensions just hype? Yes and no. Previous Macworld Lab tests have shown that an MMX-enabled PC is much faster at certain operations than a traditional Pentium PC (see "Is the MMX Pentium a Threat?" *News*, February 1997). MMX boosts primarily graphics and video functions, but only in applications that have been revised for it.

In our Photoshop tests for this story, the PCV-120 was faster than the other tested computers in several operations that were enhanced for MMX, but across all image-editing tests, the SuperMac S900/250 and the CompuLink Infinity were faster.

Mac Is Top Star in Video

Multimedia and video are other strongholds for the Macintosh, even though some users are turning to PCs running Windows NT for its industrial strength. If you're one of those users, you'd better look again at the Macintosh. Even though there were instances of the PCs' doing better in these tests, for the most part the Macs were the big winners. Here again, thanks are due to the Mac's PowerPC 604e CPU, as well as to its SCSI hard drives.

As with graphics, the PowerPC 604e chomped at floating-point and integer instructions like hors d'oeuvres. In tests in which Infini-D uses floating-point math extensively to render an image, the SuperMac S900/250 and the PowerTower Pro 225 were 50 percent or more faster than the QP6/200 SM-4. Even the Genesis MP 800+ was 50 percent faster at this task, which was not optimized for multiprocessing.

The 3-D Win We also compared the speed of Microsoft's Direct3D 3-D drivers on the PCs compared with Apple's QuickDraw 3D drivers on the Macs, using Macromedia's Extreme 3D. We created several 3-D models of varying complexity and timed how quickly each platform's rendering engine created a screen image. The SuperMac S900/250 rendered the three 3-D models faster than any other shipping computer. The prototypes surpassed it, though. (We couldn't test Direct3D on the Windows NT machine because it wasn't available at the time we tested.)

Hard-Drive Advantages The hard drive also plays a big role in multimedia applications. When a computer can't get the data it needs from external cache or RAM, it turns to the hard drive. This affects performance because even the fastest hard drive is much slower than RAM.

However, the EIDE (enhanced integrated drive electronics) peripheral bus used for PC hard drives also performs slower than the Macs' SCSI bus. Plus, drive makers tend to use faster mechanisms in SCSI drives than in EIDE

Contenders: The Top Macs and PCs Compared

	Genesis MP 800+	PowerTower Pro 225	PCV-120	QP6/200 SM-4
Company, contact	DayStar Digital* (770/967-2077)	Power Computing (512/388-6868)	Sony Electronics (800/476-6972)	Quantex Microsystems (800/896-4898)
Processor	4 200MHz PowerPC 604e's	225MHz PowerPC 604e	200MHz Pentium with MMX	200MHz Pentium Pro
RAM (base/as tested/maximum)	64MB/64MB/1GB	32MB/64MB/1GB	32MB/64MB/128MB	64MB/64MB/128MB
External cache	512K	1MB	256K	512K
System bus	50MHz	45MHz	66MHz	66MHz
Hard drive	2MB Fast SCSI-2 Quantum Atlas (7200 rpm)	2GB Fast SCSI-2 Seagate Barracuda (7200 rpm)	3.8GB EIDE Quantum Fireball (4500 rpm)	3.2GB EIDE IBM DeskStar 3 (5400 rpm)
CD-ROM drive	8×	8×	16×	12×
Video card	Imagine 128-bit, 4MB of VRAM	IMS 128-bit, 8MB of VRAM	ATI 3-D acceleration, 2MB of VRAM	MGA Matrox Millennium 64-bit, 4MB of VRAM
Sound out	16-bit stereo	16-bit stereo	16-bit 3-D SRS stereo	16-bit stereo
Networking or modem	10BaseT	10BaseT	33.6-Kbps modem with fax, voice mail, and speakerphone	33.6-Kbps modem with fax and voice mail
Ports	2 serial, standard SCSI	2 serial, standard SCSI	2 serial, 2 USB, MIDI/game	2 serial, 1 parallel
Other peripherals	16-bit stereo in	16-bit stereo in	composite and S-Video out	17-inch monitor, keyboard, speakers with subwoofer
List price	$10,400	$3695	$2199	$2799
Upgrades				
32K more RAM	included	+$200	+$200	+$200
2GB SCSI HD (7200 rpm)	included	included	+$500	+$500
Ethernet	included	included	+$80	+$80
Extras				
Monitor	NA	NA	NA	-$700 (included)
Modem	+$180	+$180	NA	NA
Speakers	NA	NA	NA	–$150 (included)
SCSI	NA	NA	+$200	+$200
Net cost	$10,580	$4075	$3179	$2929

*NA = Not applicable. *DayStar sells computers only through value-added resellers who configure RAM, hard drive, and video card to order. The price for this configuration is from Coast Peripherals (619/457-4056).*

drives, even on the high-end PCs we tested. You can add SCSI to your PC, but it's an optional upgrade that will cost you around $700 for a SCSI-2 card and a 2GB drive.

Hard-drive performance benefited the Mac when we created an animated GIF image with Extreme 3D. In that test, the slowest Mac finished 19 minutes before the fastest PC; the fastest Mac finished 51 minutes ahead of the slowest PC. Yes, *minutes*.

Program Variance Your results can vary depending on your program, though. When we used Ray Dream Designer to render a large TIFF image for one of the 3-D animation tests, the 200MHz QP6/200 SM-4 finished slightly faster than the 250MHz SuperMac S900/250. Why? While Ray Dream Studio taxes the CPU heavily, it doesn't use any floating-point math. This effectively ignores a significant chunk of the Mac's CPU. It's like shutting down the express elevator in a high-rise building—crowds move along, but not as fast.

The Video Taste-Test To judge video quality from a subjective standpoint, we asked a variety of *Macworld* and *PC World* staffers to judge four of the systems, which were disguised to hide their identities (prototype systems weren't included in our subjective testing).

Many variables affect video quality, so to equalize the playing field, we used an Apple 1710AV multisynchronous monitor set to millions of colors and the best resolution for each platform (800 by 600 pixels at a 72Hz refresh rate for the PCs, and 832 by 624 pixels at 75Hz for the Macs). We also used virtually identical video cards, the Xclaim 3D video card for Macs and the Pro Turbo PC2TV for PCs from ATI Technologies (905/882-2600, *http://www.atitech.com*). According to ATI, the only difference between them is low-level software that communicates with the Mac OS or Windows.

We asked the judges to scrutinize MPEG video clips for fluid motion; frame dropouts; and banding, streaking, or pixelated pictures; as well as sound synchronization and clarity. The judges preferred the MP 800+ and PowerTower Pro 225 to the PCs by at least a full point (on a scale of 1 to 5). And in our subjective test of 3-D animation using QuickDraw 3D on the Mac and Direct3D on the PCV-120, the judges preferred the Macs.

Make no mistake: PC multimedia performance will improve as Intel injects MMX into Pentium Pro and more software developers expend the considerable effort to update for MMX. As a result, Apple can't sit on its laurels. Moreover, if Apple hopes to make QuickDraw 3D a cross-platform standard, the Windows version had better be optimized for MMX.

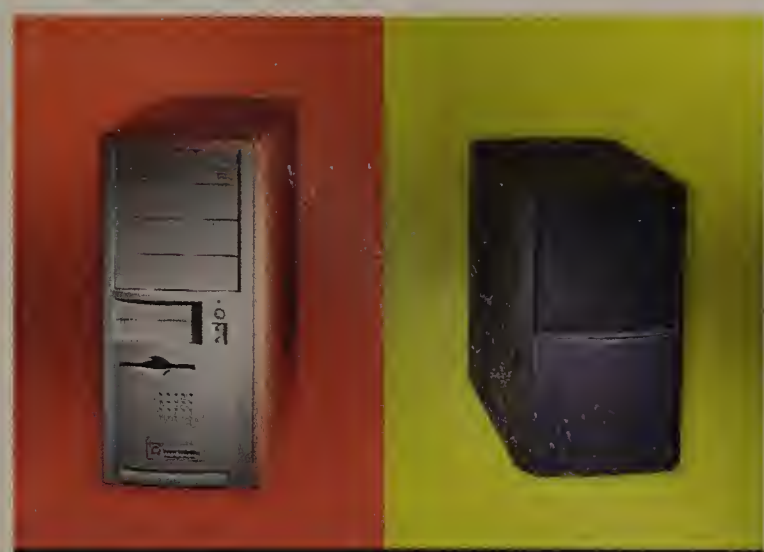
Now the Bad News

Macworld can't be accused of favoritism in what we tested. We also devised a test, incorporating the venerable PageMaker, that stressed the operating systems' multitasking capabilities. Since both Windows 95 and Windows NT feature true multitasking, while the Mac does not, it wasn't surprising that the Macs turned in such poor results.

We set up a PageMaker file to export a publication to Adobe Acrobat Distiller. Working in the background, Acrobat Distiller then turned the publication into a PDF file. The fastest Mac took almost twice as long as the QP6/200 SM-4 and 27 percent longer than the PCV-120. Ouch. This proves that the Mac OS desperately needs preemptive multitasking. A background program may get less time to work under the Mac OS with its cooperative multitasking scheme than under an OS with preemptive multitasking such as Windows 95 and NT. Apple's Rhapsody OS will fix the multitasking problem for programs running under its OpenStep component. But unfortunately it'll be a year or more before we see applications taking advantage of Rhapsody's capabilities.

This highlights another drawback for the dedicated Macintosh user. Not only must we all too often wait longer to get a new version of an application (it's been years for Excel), but we must sometimes settle for less. The latest version of Excel for Windows, Excel 97, is two years and two generations newer than Excel 5.0 for Mac, and both new Windows generations have focused on performance enhancements still lacking in the latest Mac versions.

And even though Microsoft is planning a new, faster version of Excel for the Mac to appear this fall, the Mac development chief at Microsoft doubts it will be as fast as the Windows version. (The reason is simple: much of Excel 97 for Windows is written in handcrafted Intel assembly language, while the same parts of Excel 5.0 for Mac were not written in the PowerPC's assembly language, ostensibly because Microsoft couldn't spend the resources to also write the 680X0 assembly code needed for older Macs. It's a weak excuse.)



ROBERT CARDIN

COSTS: THE $941 DIFFERENCE

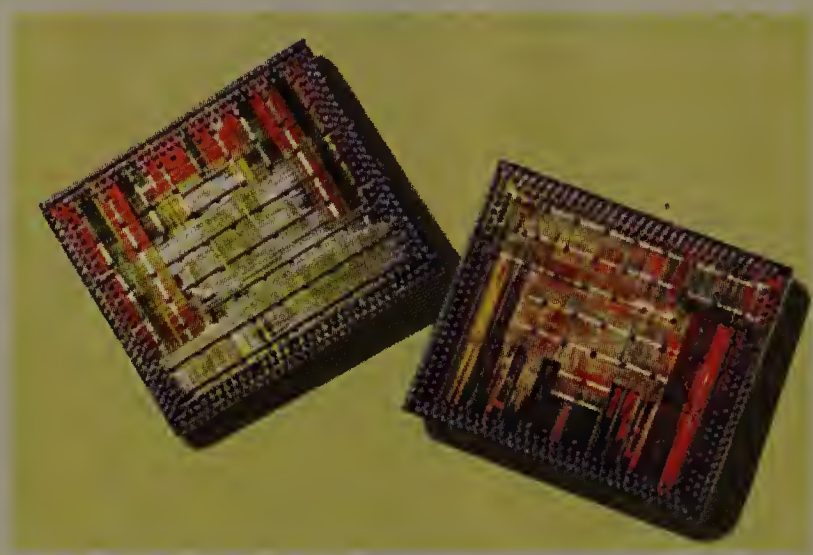
For a net cost of $4075, the Power Computing PowerTower Pro 225 (left) includes a faster processor than the PCs, a faster (but not bigger) hard drive, more VRAM, and more external cache. For a net cost of $3179, the Sony PCV-120 (right) includes a faster system bus than the Mac's, a bigger hard drive, and a faster CD-ROM drive. The difference between the two machines similarly configured is $941.

How New Macs Will Widen the Performance Gap

Macs with 250MHz PowerPC 604e CPUs are scheduled to hit the store shelves sometime this month or next. And a new batch of CPUs with increased performance are waiting in the wings. To go with the faster CPUs, Mac makers are working on other performance-enhancing technologies.

The Next PowerPCs Can you imagine an entry-level Macintosh running at 300MHz? Go ahead. Motorola plans to increase the 604e's clock speed to 300MHz by year's end (the 603e has just hit 300MHz).

In addition, IBM and Motorola have outlined plans for the G3 CPU, which is the first PowerPC specifically tuned to maximize the performance of Macintosh programs. The G3's designers expect the CPU to accelerate Mac performance 90 percent more than the 603e and 40 percent more than the 604e at the same clock speed. The G3's speeds will start at 250MHz and go up, and some models will feature a private bus for the external cache (similar to what the Pentium Pro has), which the G3's designers say increases performance by 50 percent over versions of the G3 without such a bus. In addition, the G3 will draw only as much power as a 603e, giving Apple a chance to capitalize on its resurgence in portable computers that began with the release of the PowerBook 3400. Motorola and IBM plan to ship the G3 in the second half of this year.



KEVIN CANDLAND

Hot New Processors Some versions of IBM and Motorola's G3 CPUs will feature a private bus to enable their external cache to boost system performance. Availability is scheduled for later this year.

Exponential X704 Of the many ways to achieve high performance, Exponential has focused on ultrahigh clock rates for its X704 PowerPC-compatible processor. While it has a comparatively simple architecture, the X704 can run at 450MHz, 500MHz, or 533MHz. Prototypes of the X704 installed in a Power Mac 9600 rocket past other desktop computers available today. One beta tester reports that Fractal Design Detailer and Poser both feel twice as fast with this setup as with a 9500/200, and that Painter feels smoother, with no lags even on large images with lots of color variability. Macworld Lab has verified those impressions with its test of a prototype X704 running at 440MHz—a speed constrained by the 50MHz bus of today's Macs (see "X704 Strains against Mac Limits," *News*, in this issue). Forthcoming 66MHz and faster Mac buses will let the X704 run at the higher speeds promised.

The X704 has two levels of internal cache—two tiny (2K) primary caches and a unified 32K secondary cache—and this arrangement may not fare well in some Mac applications without faster bus speeds for accessing an external cache and ordinary RAM. Exponential plans to ship the 500MHz X704 in the second quarter of this year. Considering its high power demands (75 watts, about 15 times the amount used by the PowerPC G3), the X704 is most likely to appear in high-end graphics and digital-video machines.

TriMedia Coprocessor How is Apple countering MMX? It plans to add a specialized coprocessor from Philips Semiconductor called the TriMedia chip. Think of it as a QuickTime accelerator. It's a digital signal processor (DSP) that can encode and decode various digital-audio and -video formats, including MPEG-1 and MPEG-2, Motion-JPEG, and CD-quality and Dolby AC-3 sound. If your Mac has a TriMedia chip, applications that use QuickTime video and audio automatically will benefit. Though Apple has not officially announced any TriMedia products, look for more news later this year.

Faster Bus Speeds To overcome the bottleneck created by the CPU's being slowed down by the bus, Mac clone makers are focusing on boosting system bus speed. For example, Power Computing's newest PowerCenter Pros increase the Mac's current limit of 50MHz to 60MHz by altering a current Apple design (see "PowerTower Pro Speed for Everyone," *News*, June 1997).

But when Mac makers design new models based on the Common Hardware Reference Platform (CHRP), they will be freed from using Apple's proprietary components that limit bus speed. The CHRP designs will be able to use industry-standard components to achieve bus speeds of 66MHz this fall, with 83MHz and maybe even 100MHz early next year (see "First CHRP System Is Stingingly Fast," *News*, June 1997).

Not only does a faster bus let existing CPUs run more efficiently and thus process data and instructions more quickly, but it also lets Mac makers use faster CPUs. For example, the fastest 604e that can run on a 50MHz bus is a 250MHz 604e, since it can run no more than five times the bus speed. In order to use a 300MHz 604e, a Mac maker needs a 60MHz or faster bus.

Faster External Cache Umax has its own approach to speeding access to the Mac's external cache. The company's new SmartCache card sits between the motherboard and the CPU card and doubles the clock rate at the CPU. The CPU can access the external cache on the SmartCache card at the faster rate, though the bus speed on the motherboard doesn't change. This means the SmartCache also lets Umax use faster CPUs than would otherwise be possible with existing motherboard designs. Sources indicate Apple is working on similar technology for boosting speeds between the CPU and its cache.—LON POOLE

Does the Mac Still Cost a Lot More? Now that all the testing is completed, and the Macs' performance comes out on top, you can confidently tell your PC-using friends that the Mac's advantage is not just its interface. But there's still one grenade your PC friends are likely to lob at you—the bombshell of price. Even with competition among clone makers and Apple, Macs still cost more.

It's hard to compare list prices because manufacturers configure their systems differently. For each system you're evaluating, you need to make a list of performance features included with the base configuration, increase the cost for parts you need to add, and decrease the cost for included extras you would otherwise buy separately.

For example, we added 32MB of RAM to three of the tested computers to bring them up to 64MB of RAM. The additional RAM might add about $200 to the cost. You wouldn't pay extra for a SCSI hard drive on a high-performance Mac, but for a PC without SCSI you might pay $700 to add a SCSI controller card and fast (7200-rpm) 2GB hard drive. If you're in an office and need to connect to an Ethernet network, you would add another $80 to the cost of a PC for a network interface card. Conversely, if you work in a small office and need a modem for one of the Macs, you would pay $180 for it.

Comparing the prices of the computers we tested, you still have to pay extra for performance. The Macs all cost more than the PCs, even after adjusting for a SCSI hard drive and Ethernet. How much more? More than $900 (between the Sony PCV-120 and the Power Computing PowerTower Pro 225). Naturally, we think it's worth it. However, as with any other technology purchase, it depends on your work. If you're a graphics professional, it's money well spent.

The Last Word

It's ironic in light of Apple's business difficulties that it and the Mac clone vendors are giving the Macintosh community the most powerful systems ever. Even more encouraging, the Mac is on the cusp of even more breakthroughs with both the operating system—if Rhapsody fulfills its promise—and new CPUs, thanks to the forthcoming PowerPC G3 CPU from Motorola and the X704 CPU from Exponential Technology. Furthermore, our initital CHRP testing reveals yet another source for optimism.

It may be too late for Apple to do anything more than thumb its nose at the majority player on the desktop, and certainly neither Intel nor Microsoft will sit still when it comes to incorporating new technology. But it's not too late for these breakthroughs to reward Macintosh users—that's you—who have loyally stuck with the platform. You're about to reap the benefits for your long-suffering patience. You've not only got the fastest machine, but all the plug-and-play and ease of use the Mac is known for.

Surprised? Don't be. Competition, whether against a looming foe or against upstarts in your own camp, is a worthy stimulant. So just smile proudly in response when your Mac boots up and smiles at you. And don't scoff if anyone offers you a "Cher for Senate" bumper sticker. m

Contributing editor LON POOLE has written about systems technology since the days of the Intel 8086. Features editor HOWARD BALDWIN's first PC had less RAM than today's Macs have cache.

Macworld LAB TEST

The Proof: Fast Macs Outperform Fast PCs

When Macworld Lab pitted top-of-the-line PCs against the best Macintosh systems available, the results were astonishing. The Macs soundly beat the PCs, something that hasn't happened in years. To be fair to the PCs, Macworld Lab included tests optimized for the new Intel MMX technology, but that still did not push them past the Macs. Even the new MMX-enabled Pentium Pro Infinity system from CompuLink Research (the Pentium II CPU is scheduled to be released on May 9) running at 233MHz could not outpace Umax's 250MHz PowerPC 604e (which should ship in May). And the prototype Viper system from Motorola using the Common Hardware Reference Platform (CHRP) architecture and a 266MHz PowerPC G3 should increase the distance another 15 percent, according to our spot tests. That's more than enough to beat the 233MHz Pentium II. (We did not have the Viper system in time for the full tests.) Note that the multiprocessor DayStar Genesis system did not fare well in our tests; that system is optimized for specific tasks in a handful of programs rather than for across-the-board speed.

Best result in test. Longer bars are better. Results are times as fast as the Sony PCV-120 PC (PCV-120 = 1.0). Listed from fastest overall to slowest.

	Overall Score	Image Editing	3-D Animation	3-D Rendering*	Digital Video	Scientific	Business	Publishing
Shipping Systems								
PowerTower Pro 225	1.6	1.8	1.6	1.2	2.1	1.9	1.2	0.8
Genesis MP 800+	1.3	1.6	1.2	0.9	1.9	1.5	0.8	0.7
QP6/200 SM-4 (NT, Pentium Pro)	1.3	1.5	1.3	NA	1.0	1.5	1.1	1.4
PCV-120 (Windows 95, MMX Pentium)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Prototype Systems								
SuperMac S900/250	1.8	2.1	1.7	1.2	2.2	2.4	1.5	0.9
Infinity PTK-5A (NT, Pentium II)	1.6	2.0	1.8	NA	1.5	1.5	1.5	1.5

**Compares the Mac's QuickDraw 3D rendering engine with the PC's Direct3D engine. Direct3D is not available for Windows NT.*

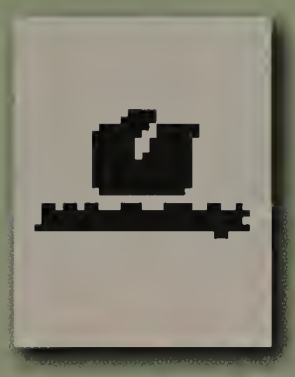
Behind Our Tests

Macworld Lab tested several real-world functions in each of 11 key programs. The various tests gauge the performance of the CPU, system and memory buses, video circuitry, and hard drive. All systems had 64MB of RAM and 8MB of VRAM. We used the internal SCSI bus on the Macs and the internal EIDE bus on the PCs. We ran our tests with 17-inch monitors at a resolution of 800 by 600 pixels in 24-bit color. We used ATI Technologies' Xclaim 3D video card on the Macs and ATI's 3D Pro Turbo PC2TV cards on the Macs; the cards are identical except for their drivers. We ran Mac OS 7.6 on the Macs and either Windows 95 or Windows NT 4.0 on the PCs.—**Macworld Lab testing supervised by Chris Uiterwijk**

This EPS image was printed on an inkjet **without** StyleScript

This EPS image was printed on an inkjet **with** StyleScript

This Encapsulated PostScript (EPS) image was printed on a color inkjet printer **without** StyleScript



This Encapsulated PostScript (EPS) image was printed on a color inkjet printer **with** StyleScript

We'd like to point out what a startling difference StyleScript makes on an inkjet printer

StyleScript turns your inkjet into a genuine Adobe PostScript printer

If you've been using your inkjet to print EPS graphics, you've probably seen something called the "jaggies". Although your inkjet is a very good quality color printer and very affordably priced, it is not PostScript. This means it will print your photos beautifully but is unable to print EPS clip-art or logos. The printed results will be jagged and certainly not what you were expecting. You need PostScript printing but PostScript printers are very expensive. That's where the StyleScript solution comes in.

StyleScript is a software package that will upgrade your inkjet into a PostScript printer, at a fraction of the cost. With StyleScript installed, you can print *any* image on your inkjet with great results. That's because StyleScript is genuine Adobe Level 2 PostScript software. Your documents will print sharp everytime — no surprises and no "jaggies". The samples above and on the facing page show what a big difference StyleScript will make on your output. And the best part — StyleScript costs less than $100.

The Benefits of StyleScript

Once you have installed StyleScript, you'll see the improvements in your printed documents right away:

- EPS clip-art and logos will be crisp and clean
- PostScript fonts will be sharp at any size or angle
- color will be more accurate
- screens/dither patterns will be better looking

Who uses StyleScript?

StyleScript is perfect for anyone who owns an inkjet printer and needs to print sharp looking graphics. That includes:

- home or education users who want to use EPS clip art on everything from house party invitations to t-shirt graphics
- graphic designers who want an inexpensive and accurate personal proofing system
- business users making presentations on paper, transparencies, or film

Supported Printers

StyleScript supports a wide range of inkjet printers from Apple, Epson, and Hewlett-Packard.

Get StyleScript and see for yourself what our PostScript solution can do for your inkjet

Call us: 800.663.6112
Web: www.stylescript.com

StyleScript®

INFOWAVE

© 1997 Infowave Wireless Messaging Inc. PHONE: 604.473.3600 FAX: 604.473.3699
All product and corporate names are trademarks of their respective companies.

Circle 32 on reader service card

MACWORLD'S

TOP 101 TIPS

Save time, trouble, and disk space with our experts' favorite software and online tips

Duplicate Find File to Find Files Faster

1 To run simultaneous searches, copy your Find File application and rename it. Then you can start one search with the first Find File program and a second one with the renamed copy. Your Mac processes both searches simultaneously, and when they're complete, each copy will display the search results in a separate Items Found window.—JS

Hot Tip: Skip http://

2 You don't have to type a URL in its entirety, *http://* and all. For the URL *http://www.macworld.com*, for example, you can simply type **macworld** in your browser's location field.—EF

Keeping Project-Related E-mail with Other Project Files

3 It's nice to have a folder in which you keep all files associated with a particular project. You can also put e-mail associated with a particular project into that folder by doing the following: In Qualcomm's Eudora create a mailbox for a new project. Next, make an alias of the project mailbox (not the .toc file), which is stored in the Eudora folder, usually found in the System Folder. Place this alias in your project folder. You now have project files and e-mails all in one convenient place.—WHN

Easy Enclosures

4 Enclosures in CE Software's QuickMail became dialog box–heavy with version 3.5 (five steps to add just *one* attached file), so why not use System 7's drag-and-drop function instead? Select the files you want to attach and drag their icons onto a QuickMail form. QuickMail 3.5 automatically adds them as enclosures.—JFS AND SC

Make Mounts Count

5 When you mount a server volume across a network, do what you must and then press ⌘-Y to unmount it. Keeping servers mounted unnecessarily bogs down the network.—ED

Hit Cancel to Reset

6 To reset the choices inside many of Adobe Photoshop 4's dialog boxes, press the option key to change the Cancel button to Reset, then click on the Reset button to bring back the original values. Or press option-escape or ⌘-option-period.—DM

Make Browsing Easier

7 Hey, Webmasters, if your Web site uses special features, such as embedded Adobe Acrobat files, JavaScript, or Macromedia Shockwave animation, be cognizant of the first-time user. Make sure you've built hyperlinks to the appropriate Web pages or program files so that Internet rovers will be able to easily download what they need in order to enjoy those features of your page.—GG

Easily Adding Words into QuarkXPress

8 Adding new words or a long list of acronyms to an auxiliary dictionary in QuarkXPress can be a time-consuming task. Here's a way to automatically add all the words in a QuarkXPress document to the active auxiliary dictionary. First, open the auxiliary dictionary to which you want to add words and begin a spelling check. When the spelling check stops at the first unknown word, hold down the shift and option keys while you click on the Cancel button. Voilà! The open auxiliary dictionary now contains all the words in the document.—BA

JOHN HERSEY

Power Navigation through Excel

9 Don't bother tabbing through the empty cells in a Microsoft Excel spreadsheet. Hold down the ⌘ or control key when pressing the up, down, left, or right arrow keys to leapfrog over empty cells and move directly to the next nonadjacent *filled* cell in a row or column. Use these keystrokes *within* a block of data to jump to the edge of the current block.—JS

Keep Applying the Same Attributes

10 You can automatically apply the same field or object formatting to all subsequently created fields and objects in ClarisWorks 4. In Layout mode, select the pointer tool and click on an empty spot in the layout (making sure that nothing is selected). Then choose formatting options from the palettes and menus. Additional fields and objects that you create are automatically formatted with the attributes you've chosen.—SS

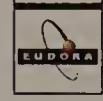
Thank You for PhotoText

11 PhotoTools' PhotoText filter eliminates most uses for Adobe Photoshop's native type tool and offers a few unexpected keyboard shortcuts: First, you can press the option key to access the arrow tool when the type tool is active. Better yet, you can press ⌘-tab to switch back and forth between the type and arrow tools.—DM

A Future Finder?

12 Drag a folder onto Netscape Navigator's browser window, and Navigator lists the folder's contents. Files and nested folders become clickable links; if Navigator supports the file format (HTML document, text file, JPEG graphic, and so on), Navigator displays the file's contents. You can also view kinds of files for which you have configured Navigator to use a plug-in or helper application. You can even save the catalog as a file. This is a perfect way to catalog and browse clip art.—NV

Sending Attached Files

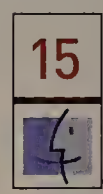


13 Instead of using the Message, Attach Document, and Open File Dialog menu items in Qualcomm's Eudora to attach a file to an outgoing e-mail, you can simply drag and drop a file onto the Eudora icon (or an alias thereof), and it automatically attaches to the document you are composing.—WHN

Get to Your Favorite AOL Forum Fast

14 In America Online 3's Favorite Places feature, you add your favorite AOL forums by clicking on the heart icon at the right side of each forum's title bar. You can then drag each file from Favorite Places to your Mac's desktop, which creates clipping files. Take the clipping files and place them in a folder named, say, Top AOL Spots. When you double-click on one of your top spots, AOL 3 opens, begins the connection process, and once you're logged on, accesses the area you selected. If you're already on AOL, the area you choose is brought right to the screen.—GS

Customize Your Stickies



15 You can create customized Stickies for phone messages and to-do lists by setting up a new Stickies note in whatever style you like—you can even insert default text across the top. Then choose the Export Text command from the File menu and choose the Save As Stationery check box. Give the note a name, then click on Save. Instead of writing the note into the standard Stickies file inside the Preferences folder in the System Folder, create a New Notes folder in your Apple menu and keep all your customized Stickies stationery tucked there.—JS

Create Colors Quickly

16 To add a new color to Adobe PageMaker 6.5's Colors palette, don't bother with the hassle of the Define Colors dialog box. Just go into the Color Options dialog box directly by ⌘-clicking on any of the Black, Registration, or None colors in the Colors palette. Because you can't edit these colors, PageMaker lets you create a completely new color instead.—GG

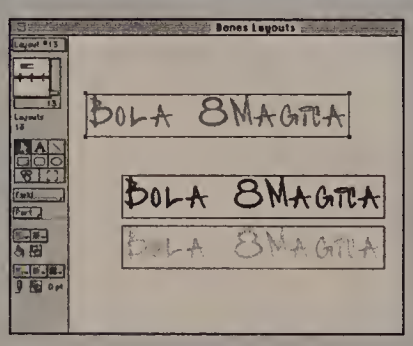
Easy Transition from Word to PageMaker

17 Chances are you create Microsoft Word documents using the Normal style (it's the default, after all). By creating an Adobe PageMaker style called Normal, when you import Word text, PageMaker redefines it to its Normal style. This saves you from having to apply your basic body style—the style used for the bulk of your text—in PageMaker to all that body text you've imported.—GG

BONUS TIP

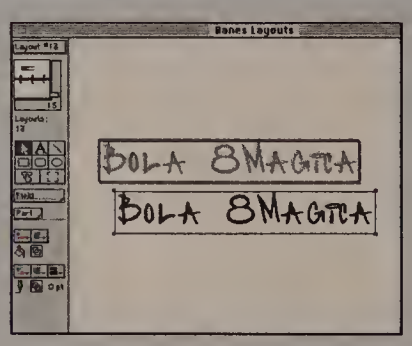
Embossing Text

Give your Claris FileMaker Pro 3 layout some depth by creating embossed headers or labels. In Layout mode, select or type the text you want to emboss and make two copies. Set the text color of the original to the same color as your layout background (under the Format menu). Then follow these three steps.—JFS and SC



Step 1

Here are two copies of the original text, one set to a lighter shade and one to a darker shade. Select the original and choose Bring to Front, then Lock from the Arrange menu.



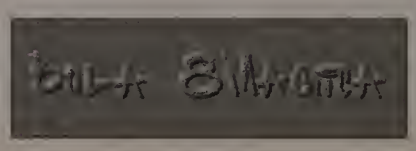
Step 2

Align the lighter block of text with the locked original text, then use the arrow keys on the keyboard to offset the lighter text one pixel up and one pixel to the left; then do the same thing with the darker text block, only this time offset the text one pixel down and one pixel to the right.

Step 3

Finally, set your FileMaker Pro layout's background color to match that of the original block of text.

Back in Browse mode, the text looks like this.



Do-It-Yourself Launcher

18 In Microsoft Internet Explorer 2.1 and later, you can launch another program, such as Claris Emailer, from a bookmark. Open the Favorites window and choose Import from the File menu. In the Open dialog box, navigate to the application you want to bookmark, select it, and click on the Open button. In the Favorites window, click on the program bookmark once to select it, and choose Get Info from the File menu. In the Get Info window's URL section, change the word *file* to *launch*. Now your bookmark opens the application.—RH

Getting Out of an Option Box Rut

19 If you press a key and Adobe Photoshop 4 doesn't seem to react—or worse, it beeps at you—it's probably because it's trying to apply the command to an active option box. To get out of the option box and return control to the image window, press the return key.—DM

Speed the Printer

20 Make printing more convenient by putting aliases of your Desktop Printing icons in all the folders you use the most—then you're never more than a quick drag away from a print job. Also, rename the desktop printer icons to make it easier to remember which printer has letterhead or is closest to the mailroom.—JS

Into the Database Faster

21 If you have a multiuser Claris FileMaker Pro database, you can get rid of that annoying password dialog box without getting rid of password protection. Set the database to use the lowest-level password you've created for that particular database (click on the Try Default Password check box in the Document section of Preferences, under the Edit menu). If you want to use a different password, just hold down the option key when you open the database.—SC

Handling Layers in Photoshop 4

22 Used to working with layers in Adobe Photoshop 3? Version 4's method of pasting a selection into a layer mask can be confusing. To do so without creating a new layer, option-click the layer mask thumbnail to view *only* the mask, and *then* paste your selection. Alternatively, use the Channels palette to select the mask channel and make it visible, then paste.—LP

Quick-Mask Quickies

23 Press the Q key to enter Quick Mask mode in Adobe Photoshop 4, where you can edit the selection outline as if it were a rubylith. Press the Q key again to exit the mode. Option-click on the Quick Mask icon in the toolbox to reverse the rubylith; that is, color the selected area with red and make the deselected area transparent. Double-click on the Quick Mask icon to change the color of the rubylith so it stands out more from the image.—DM

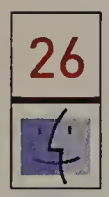
Getting To the Colors

24 Colors are now more convenient in Adobe Illustrator 7, but you have to know how to get to them. The four important key shortcuts to memorize are comma, period, slash (all in a row on the keyboard), and X. Press X to switch back and forth between the fill and stroke. Press the comma key to fill or stroke a selected object with a solid color and display the Color palette (if it's not already visible). Press the period key to fill a selection with a gradation and display the Gradient palette. Press the slash key to make the fill or stroke transparent.—DM

Hints on Tints

25 If you're one of the many Adobe Photoshop users who wonder why you can't shift-drag a slider handle to adjust all CMYK handles in unison (the way you can in Adobe Illustrator), it's because this technique doesn't work in Photoshop 4's Color palette. It doesn't need to because you can create a tint of any color simply by choosing HSB Sliders from the Color palette's pop-up menu and then adjusting the B (for brightness) slider. This maintains the slider settings for H (for hue) and S (for saturation), and modifies just the tint.—DM

Keyboard Shortcuts for Dialog Boxes



26 While the scrolling list of files and folders in an Open or Save dialog box is highlighted, typing in the first few letters of a file or folder name takes you there. You can also move up and down the folder hierarchy by holding down the ⌘ key and pressing the arrow keys. Pressing the up arrow takes you to the next level up in the hierarchy, while the down arrow drills down into whatever volume or folder is highlighted. Use the left and right arrows to switch volumes.—CC

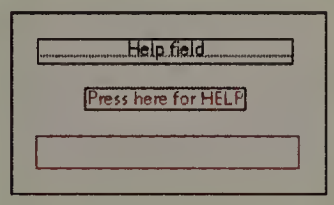
Format Text Tout de Suite

27 When designing a ClarisWorks 4 database, you can set text-formatting options for fields from the menus. The fastest way, however, is to double-click on the field. The Text Style dialog box that appears enables you to specify

BONUS TIP

Make Sure Help Is Available

Want to create a Help button in your Claris FileMaker Pro database that can't be missed yet doesn't take up a lot of screen real estate? Select the Help field and choose Field Format. In the dialog box, select Pop-up List and then Define Value Lists. Create a new list, and type in your help information. Save the list and click on Done. Next, make the Help field transparent. Create a text block with something catchy, such as Press Here for Help. Set the text to an equally eye-catching color, and align it over the Help field. You might even want to place a box around the Help field to make it stand out a little more.—SC

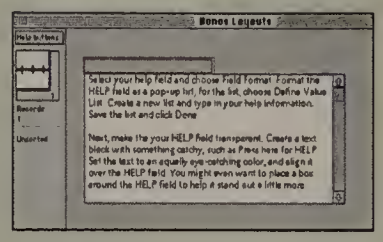


Before

After

Step 1

These are the pieces in Layout mode (top) and how they look after alignment in Browse mode.



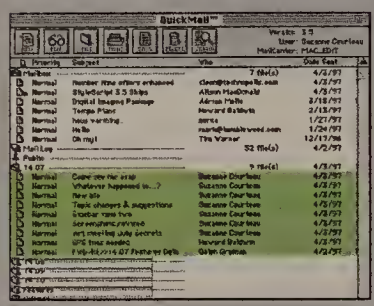
Step 2

Click on or tab to the Help field, and the help text (complete with scroll bar) pops up. Users can read the instructions and then continue with their work—the help text goes away when they tab out of the Help field.

BONUS TIP

Saving Categorized Mail

If you save your QuickMail in folders, you eventually end up with a lot of out-of-date folders that you still want to keep.—HB



Step 1

To move these messages offline, go into the folder and highlight all the messages. Then drag them to the desktop in one batch and delete the highlighted mail.

Dragged Mail

old 14.07 QMs

Step 2

They are collected into a giant text file named Dragged Mail, which you can rename something more descriptive. You have to go into the file to delete all the extraneous header information, but it's an easy way to clean up QuickMail folders.

the font, size, style, and text color all at once.—SS

In Doubt? Press Tilde

28 In Adobe Illustrator 6, you press the W key when drawing a star, spiral, or polygon to create a succession of motion trails. When scaling or rotating a shape filled with a tile pattern, you can manipulate the tile pattern and leave the shape unharmed by pressing the P key while dragging with the transformation tool. Those keys were somewhat random and difficult to remember, so Adobe switched them both to a tilde (~) in Illustrator 7. It's now the official hidden tricks key.—DM

More Delete-Key Tricks in Photoshop 4

29 Just when you thought you knew every delete-key shortcut, Adobe Photoshop 4 comes along and piles on a few more. First, you can press ⌘-delete to fill any selection with the background color, even if the selection is floating or on a layer. When working on a layer, you can press ⌘-shift-delete to fill only the opaque area of a selection with the background color. And press shift-option-delete to fill the opaque area with the foreground color.—DM

Improved Sanitation

30 The Layers, Channels, Paths, and Actions palettes in Adobe Photoshop 4 now include little trash icons in their lower right corner. In Photoshop 3, you had to drag an item onto the trash icon to delete it. Now you can just click on the trash icon to delete the selected item.—DM

Save the "Welcome" Mat

31 When you subscribe to an Internet mail list, you typically receive a "welcome" message, describing the purpose of the list and telling you how to unsubscribe. Save this message! Create a special mailbox to save all these "welcome" messages in. Otherwise, three months from now you won't be able to figure out how to send an unsubscribe message and, more important, *where* to send it. The address for sending subscribe and unsubscribe messages is different from the address you use to send postings to the list itself.—WHN

Keep Page Elements within Boundaries

32 When creating documents for the Web in Adobe PageMaker 6.5, make sure that graphics don't extend past the page boundary. Otherwise, they'll be removed when you export the page to HTML. Also, make sure that text blocks start within a page's margins—specifically, the upper left corner of the text block must be inside the page boundary. As long as that's done, it's OK for them to extend past the margins.—GG

A Safeguard against Overwrites

33 You don't want a single click on a master-page name to accidentally reformat the current page in Adobe PageMaker 6.5, so here's a safeguard: select the Prompt On Apply option from the Master Page palette's pop-up menu. When that's checked, each time you click on a master page's name from the palette, up pops a dialog box asking you to confirm whether you want a master page to be applied.—GG

Putting the Accent on the Right Syllable

34 Are you forever forgetting how to type accented letters? For a quick reference, open Apple's Key Caps under the Apple menu to display an on-screen version of your keyboard. Hold down the option key and you'll see the accent keys outlined in gray. Type one of those keys, then let up on the option key. The letters that will accept that accent are outlined in black. Press one of those keys to type an accented letter. (Press the shift key to see which shifted keys work with the accent.)—EF

See Layout Changes Now

35 As you experiment with different layouts and formatting in ClarisWorks 4, the usual procedure is to make changes in Layout mode, switch to Browse mode to see the effects of the changes, and then switch back to Layout mode for further adjustments. A smarter approach is to create a new window for the database by choosing New View from the View menu. Set one window for Layout mode and the other for Browse mode. Now, when you make changes, you instantly see their effects in the other window.—SS

Zooming in Photoshop 4

36 The latest version of Adobe Photoshop lets you zoom to 100 percent view size (that is, doubling the size of the view) from the keyboard by pressing ⌘-option-0 (zero). You can also press ⌘-0 to reduce or magnify the image so it exactly fits on screen.—DM

Adding Favorite Links

37 You can drag links to Adobe PageMill 2 from both Netscape Navigator 3 and Microsoft Internet Explorer 3. Just be sure to click and drag quickly to keep the link from activating. You can drop Navigator links right into your document, but you have to drag Internet Explorer links into PageMill's Link To field.—JSF

Be Sure the Fonts Go Too

38

If you want to print QuarkXPress pages as an EPS file and give it to a friend, but are worried that she'll get Courier substitution when she prints it because her computer doesn't have the right fonts, here's what you can do. Using LaserWriter driver version 8.X, open the document you will be saving as an EPS file. Choose Print from the File menu. In the Destination area of the Print dialog box, click on File, and then click on Save (the Save button will be where the Print button usually is). In the dialog box that appears, choose EPS Mac Standard Preview from the Format pop-up menu. Choose All from the Font inclusion pop-up menu. Name the EPS file and click on Save. The resulting file contains the fonts necessary to correctly print the text in the EPS file to a PostScript printer. Note: EPS files that are saved this way are ideal for use with QuarkImmedia's Print EPS action.—BA

An Empty In-Box Speeds Up Your Network

39

An easy way to be a good network neighbor is to clean out your CE Software QuickMail in-box regularly; file messages in folders (or better yet, act on them immediately) to keep them from bogging down the network.—ED

Highlight Bad Type

40

Few things are harder to read than small, 72-dpi type on a colorful, busy background. If you come across this on an abysmally designed Web page, selecting the text will usually help, as the highlighting wipes out the distracting background. (Then send e-mail to the Webmaster asking him or her to fix it.)—EF

Keep Snoops Away

41

The best way to deter snoops is to keep them from pawing around in the first place. Use ResEdit to create a threatening start-up message. Make a copy of System 7.5's WindowShade Preferences file (in the Preferences folder in the System Folder) and open the copy with ResEdit. Double-click on the STR icon and then open STR resource -16397 (it's the only one listed). In the field called The String is the error message normally generated by clicking on this file. Replace this text with your own scary message. When you're done, save the doctored file and place it in the Startup Items folder. If you're using System 7.5 or later, turn off Macintosh Easy Open. Anyone who starts up your Mac will be confronted with your intimidating message—and might be spooked enough to shut it down. You can dismiss the bogus warning when you start up, or avoid it completely by holding down the shift key as soon as the Mac desktop appears (this allows extensions to load normally but bypasses the Startup Items folder).—JS

Adding a Photo Album to the Tool Bar

42

If you have a folder of frequently used images, PhotoTools lets you append these images to Adobe Photoshop's tool bar as a pop-up menu. Click on the Customize Toolbars icon in the PhotoTools Commands palette. Then click on the button labeled New Button to display another dialog box, and select the Finder Item check box. You'll be asked if you'd like to select a file or folder. Click on the Folder button and locate the folder on disk. Then select an icon and press return. Finally, drag the icon up into the tool bar. From now on, your new icon serves as a pop-up menu of images in the selected folder. Just choose a file from the pop-up menu to open it in Photoshop.—DM

Make Better FileMaker Pro Searches

43

In Claris FileMaker Pro's Find mode, precede your keyword with an equal sign to find exact matches. For instance, **=Apple** will find instances of *Apple* but not *Applebaum*. To find specific pieces of text, bound your keyword or phrase by quotation marks. For instance, "!" finds records with exclamation points, while just ! finds duplicate records.—SC

Tossing Locked Files

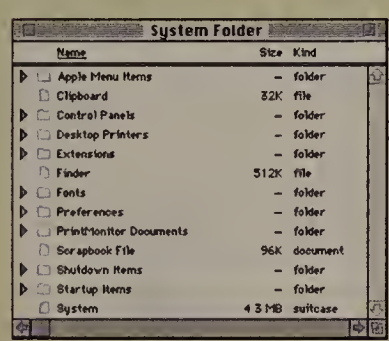
44

Normally, you must unlock files before you can throw them away. However, you can force the Trash to empty—regardless of what kinds of files it contains—by pressing the option key

BONUS TIP

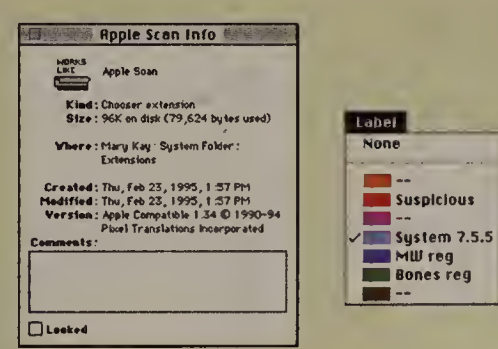
Keeping Tabs on System Clutter

The function of a control panel or extension is usually clear from its name—but not always. The two steps below will help you hunt down nonessential system components, see where they came from, and figure out what they do.—JS



Step 1

Perform a clean install of your system software and apply a color label to every item in the System Folder. Select all the files—in Name view use ⌘-option–right arrow to open all nested folders—then choose a color from the Finder's Label menu. You can also give the label an appropriate name. Later, this color coding lets you see which components were part of your original installation and which were dumped in by other programs (all the unlabeled files).



Step 2

If an extension's name or icon provides no clue as to what it is or does, select the icon in the Finder and use the Get Info command (⌘-I). The Version field almost invariably bears the name of the company that produced the software. You can quickly determine whether an extension is a piece of Apple software or a component added by third-party software, maybe software you no longer use. If the latter is true, you can safely trash it without fear.

when you choose the Empty Trash command. Presto—it's outta here.—SS

A Hidden Tip for Document Conversion

45 Adobe PageMill 2.0 includes a set of Mastersoft translation plug-ins that allow you to open many word processing formats from right within PageMill. The plug-ins automatically convert the file Record.—JSF

Changing Layers

46 Since the old layer-selection keystrokes are otherwise occupied in Adobe Photoshop 4, Adobe had to invent new keystrokes for switching layers. In the new version, you press option-[to select the next layer down and option-] to select the next layer up. You can also press shift-option-[or shift-option-] to switch to the bottom or top layer, respectively.—DM

Can't Remember the Name, Only the Initials

47 To find someone easily using Now Software's Now Contact's Find function, just type the initials with a space in between. For example, type **G A** to find the number for *Gil Amelio*.—CP

Fresh Fonts Folder

48 It's easier to start fresh with a new Fonts folder than to try to fix a damaged font suitcase. Drag the Fonts folder from the System Folder to the desktop. Then open the Fonts folder and drag the damaged suitcase to the Trash. Empty the Trash and put the Fonts folder back in your System Folder. If you can't drag the damaged suitcase to the Trash, create a new folder named Fonts inside the System Folder while your original Fonts folder is still sitting on the desktop. Drag everything except the damaged suitcase from the old Fonts folder to the new Fonts folder. Restart the computer and then drag the old Fonts folder, still containing the damaged suitcase, to the Trash.—LP

Speed Up Performance by Clearing Cache

49 Netscape Navigator 3's performance can become sluggish if a lot of pages are cached. To clear the cache, select Network Preferences from the Options menu, then click on the Clear Disk Cache Now button in the dialog box that appears.—EF

Bringing Up Nested Files

50 If you have a deeply nested file that you want to bring up the hierarchy in an outline view without dragging it to the desktop, simply highlight it and drag it up to the header of the window (anywhere above the double line will do). Then drop the file, and it will appear at the topmost level.—JS

Locking Your Toolbox

51 It's not unusual to use the same tool repeatedly when designing a database layout. Unfortunately, the ClarisWorks 4 database automatically switches back to the pointer after you use any other tool. To keep the same tool locked for repeated use, double-click when selecting the tool. To unlock a tool, simply click on another one.—SS

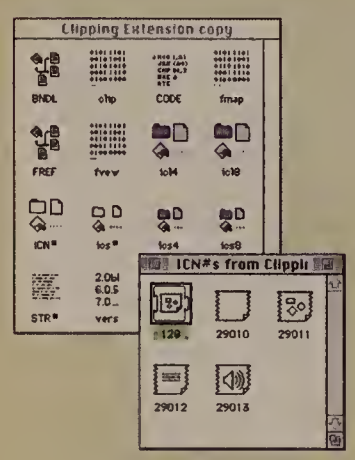
Yes, I'm Positive I Want to Delete This Message

52 CE Software's QuickMail always checks to make sure you want to delete a message. It's a nice feature, but somewhat aggravating. If you want to bypass this warning, press ⌘-option-D to delete; if you're using the mouse, hold down the option key when you click on the delete button.—ED

BONUS TIP

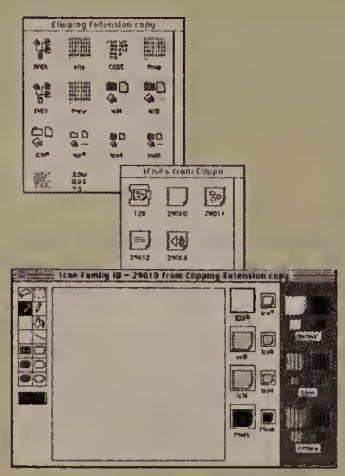
Slimmer, Trimmer Clipping Files

Once you discover the joy of using clipping files to capture and shuttle information from program to program, you may be tempted to drag and drop text like crazy—until you wind up with a desktop littered with clipping icons. For a less cluttered look, you can use ResEdit to create clipping files that appear on the desktop sans icons. To do this, first make a copy of the Clipping Extension file, located in the System Folder's Extensions folder, and open the copy with ResEdit.—JS



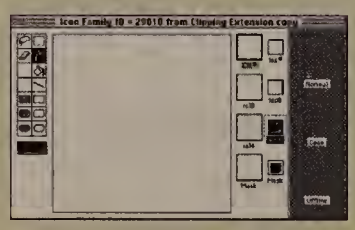
Step 1

Double-click on the ICN# resource icon to open the file's five ICN# resources (ICN stands for *icon*).



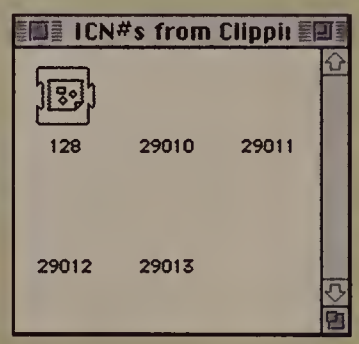
Step 2

Double-click on resource 29010 to open the icon editor, then erase the current icon so that the drawing field is completely blank (double-clicking on the eraser tool erases the whole icon automatically).



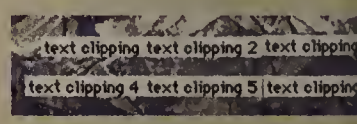
Step 3

Now drag down the topmost blank box (labeled ICN#) and drop it on the box labeled icl8 to erase that icon as well. Repeat this drag-and-drop procedure with all the other icons in the dialog box, including the two labeled Mask, so that they are all blank.



Step 4

The result will be a totally invisible icon, as shown above. Close the resource 29010 dialog box. Repeat the preceding two steps for resources 29011, 29012, and 29013 (don't worry about resource 128, which is the icon for the Clipping Extension file itself). Save your changes and quit ResEdit.



Step 5

Replace your old Clipping Extension with the edited copy, and restart your Mac. From now on, new clipping files materialize on your desktop with names but no icons, so you can arrange them more compactly. Double-clicking on the name opens the clipping file.

Launch Your PPP Connection Directly

53 Instead of allowing Qualcomm's Eudora, Netscape Navigator, or other Internet applications to indirectly launch your PPP connection, you should always launch FreePPP or MacPPP directly from their own menu prior to launching your Internet application. You will often experience difficulty reestablishing a PPP connection to your ISP, forcing you to reboot your Mac, if you do it the other way around.—WHN

Keep Browsing While Web Pages Load

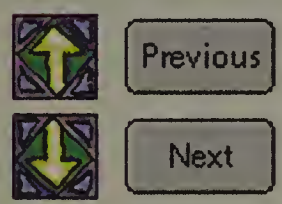
54 Tired of staring at graphics-intensive Web pages while they're loading, chunk by chunk? You could be spending that time more productively, looking at other pages. While a slow page is loading, choose New Web Browser from Netscape Navigator 3's File menu. A new Navigator window appears, with the first page you opened when you started up Navigator. You can now browse other pages from the second window while the page in the first window is loading.—EF

Bounce Right Back after Search and Replace

55 After performing a documentwide operation such as a search and replace or a spelling check, Microsoft Word 6.0 usually places your cursor at the top of the document instead of where it was just prior to that operation. To get back to where you were, simply press shift-F5 (or 0), and your insertion point will jump back to where you left off editing. Use that keystroke again to go to the prior insertion point. (Hint: Word 6 stores the location of the last three insertion points.)—WHN

BONUS TIP

Dandify Your Database



Enliven your database by using graphics instead of Claris FileMaker Pro's drawing tools or Button tool. Not an artist? You can download many free or nearly free icon collections from Macworld Online (*http://www.macworld.com*) or *Macworld*'s forum on America Online (keyword *Macworld*). I mean, which would you rather use?—SC

A Tip for the Tab Key

56 When you have an Adobe PageMaker 6.5 document open with the arrow tool active, do yourself a favor and press the tab key. Presto! All open palettes are turned off, giving you a clear view of your document. Press tab again to reactivate the invisible palettes.—GG

Moving through the Palettes

57 Adobe Illustrator 7 makes navigating palettes a breeze with some nifty shortcuts. Press ⌘-tilde (~) to highlight the last value you edited in any visible palette. Then press tab to go from one option box to the next, or shift-tab to back up. After entering a new value, press return to apply the value and leave the palette; press shift-return to apply the value and keep it highlighted so you can change it again. If you remember these keys, you can race through palettes without ever touching the mouse.—DM

The Story Editor Adds Text

58 Want to create a new story in Adobe PageMaker 6.5's Story Editor? First, be sure your cursor is outside of all text blocks and press ⌘-E. After you type the text and close the Story Editor, a dialog box asks whether you want to place the text. Click on the Place button and place text as you normally would.—GG

Establish a Text Baseline

59 Fussy about how your text lines up on the page? Set up a baseline grid, a network of baseline guides that your type snaps to. Use QuarkXPress's global preferences to set up a grid to your liking by choosing the Edit menu's Preferences submenu, then Typographic. To view the grid once it's been established, choose Show Baseline Grid from the View menu.—BA

Be Wary with ResEdit

60 Whenever you alter a file with ResEdit, be sure to work on a copy of the original file. Why? ResEdit actually updates the file on disk. If you answer No when ResEdit prompts you if you want to save your changes when you close or quit the program, ResEdit reverses its changes. But if your Mac crashes or ResEdit quits unexpectedly before you can reverse your ResEdit changes, you'll find the changes in place when you restart your Mac.—EA

Rename without Pause

61 If you hate that pause between clicking on a Finder icon's name and being able to edit it, quickly move the mouse pointer just outside the name after you click on it. This maneuver instantly selects the text for editing. You can also click on the icon name and then move the insertion point by pressing an arrow key. Pressing the up-arrow key moves the insertion point to the beginning of the name; pressing the down-arrow key moves it to the end.—AS AND LP

Forget the Frame, but Keep the Text

62 If you've placed text in a frame in Adobe PageMaker 6.5, but then decide to get rid of the frame, use ⌘-F, or select Frame in the Element menu and then Separate Content. This splits the frame from its content, and you can delete the frame without losing the text.—GG

Finding Creator Codes

63 You don't have to use ResEdit to determine file type or creator codes for Find File searches—just drag a similar file onto the Find File window and the type or creator code fills in.—JS

Collapse Those Palettes

64 If a palette gets in the way of your viewing an image in Adobe Photoshop 4, you can hide it by clicking in the close box on the left side of the title bar, or collapse the palette by clicking in the collapse box on the right side of the title bar. To collapse the palette down to its smallest possible size—just the title bar and panel tabs—option-click in the collapse box or double-click on a panel tab.—DM

Put Off Long Print Jobs

65 Schedule long or complicated print jobs during off-hours with Desktop Printing 2's Timer option. Put the job on hold by clicking on the Hold button in the print queue window, then click on the Timer button. In the Set

Print Time dialog box, click on the At Time radio button, set the date and time when you want the job to print, and press return.—JS

One Emailer, Many Mailboxes

66

To avoid any confusion when two or more people are receiving e-mail with one copy of Claris Emailer 2, just create a separate folder for each person's mail. Then create a Mail Action that automatically places mail addressed to each person's account into the correct folder.—JSF

Adjust Your Cache When You Upgrade RAM

67

If you've added RAM to your Mac, be sure to go into the Memory control panel. Click on the Use Defaults button. Your system will check the amount of RAM it has, and the cache level changes accordingly.—MH

Extend a Selection

68

One of the most useful and universal Macintosh shortcuts is to extend a text selection by using shift-click. Say you've got a long text document and you want to select all but the last sentence. Instead of holding the mouse button down and slowly scrolling all the way through, you can instead select a short piece of text, use the scroll bar to jump the document down to the end of the next-to-last sentence, and then press shift at the same time you click the mouse there.—WHN

Delete Junk Mail Fast

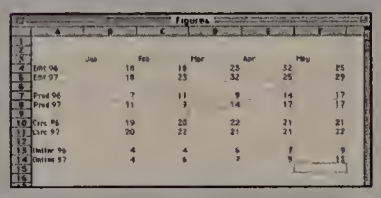
69

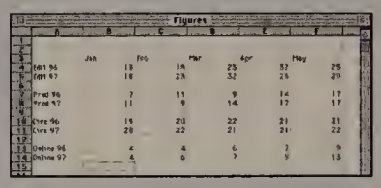
Most junk e-mail comes from the same few addresses. Each time I get junk e-mail from somebody new, I create a Mail Action in Claris Emailer that automatically files messages from that address as Deleted Mail.—JSF

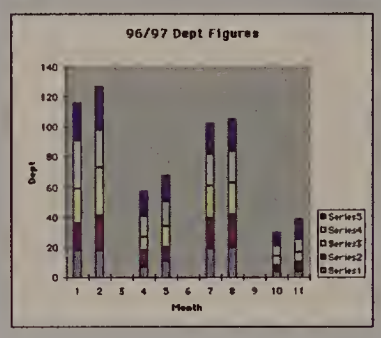
BONUS TIP

The Impossible Bar Chart

If you've ever wanted to make stacked bar charts with multiple groups in Microsoft Excel, you've probably thrown up your hands in frustration. It's not impossible, though—the trick is in laying out the data.—SD

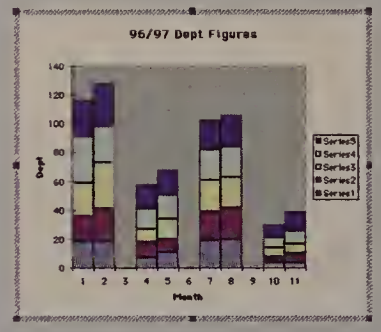






Step 1

Set up the data in rows and columns (left). Select the whole range of data, and create a new chart by choosing Chart from the Insert menu or clicking on the Chart Wizard button (center left). Double-click on the new chart to select it, then choose AutoFormat from the Format menu, and set the chart style to format number 3 in the Column gallery.



Step 2

With the bar chart still selected, choose Column Group from the Format menu, and in the dialog box that appears, click on the Options tab and set the Gap Width to zero (the default is 150). You'll end up with a chart like the example shown.

Illustrator Does Math

70

Adobe Illustrator 7 lets you add, subtract, multiply, or divide inside just about any dialog box. To enlarge a selected object to 200 percent of its current width, just append **2** to the W value in the Transform palette. To rotate an object 15 degrees farther than the previous rotation, add **+15** to the Angle value in the Rotate dialog box. Enter a slash to divide and a dash to subtract.—DM

Keeping Color Correction Consistent

71

The color-correction dialog boxes reset each time you bring them up on an Adobe Photoshop 4 screen to provide you with a fresh start. But there may be times when you want to take the corrections you applied to one image and duplicate them onto another image. To reinstate the last settings you applied, press the option key when choosing the appropriate command; or you can press option along with the keyboard shortcut, as in ⌘-option-L (for Levels).—DM

In Search of the Lost Bookmark

72

If you forget to add a site to your Bookmarks list in Netscape Navigator 3 and can't find it with a keyword search, open the System Folder, the Preferences folder, the Netscape folder, then the Cache folder. The Cache folder can hold hundreds of recently visited sites. Although the file names aren't very descriptive, you can open cached sites to find the one you are looking for.—EF

Cleanup on Aisle 7.5

73

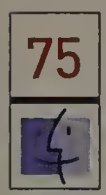
Every Mac comes with driver software for a wide range of Apple printers. You need only the ones that work with the printers you actually use; ditch the rest. Look for driver files inside the Extensions folder. While you're there, pare down the Printer Descriptions folder, which is crammed with printer-specific files you'll never use. Similarly, your Extensions folder is probably full of CCLs—modem drivers used by the Apple Communications Toolbox. Each CCL file bears the name of a specific modem model. You need only the CCL file for your modem.—JS

Get AOL on the Road

74

Getting a local access number for America Online can be a problem when you're staying at a hotel that requires dialing 9 or 8 to get an outside line. You can't add that prefix to the toll-free number dialed for the "Get Local #" locality because AOL doesn't allow changing that locality's setup. Instead, choose the Home locality, click on the Setup button, and specify the outside-line prefix there. The prefix finds its way to the "Get Local #" locality. Problem solved.—HL

Batch Copy or Delete



75 Use Find File in the Apple menu (or Find in the Finder's File menu) to find a batch of files from multiple folders on one disk or on multiple disks. Then you can select all or any part of the found items and drag the batch from the Find File window to the Trash or to any disk or folder.—PR

Build a Free, Home-Grown URL Minder

76 Use Netscape Navigator's built-in Bookmarks feature to bookmark all the Web addresses you want to save, then open your list of bookmarks by choosing Bookmarks from the Windows menu. Now drag any of the bookmarks you created from the Bookmarks window to the desktop (or even more conveniently, drag the topmost bookmark *folder* in the hierarchy to grab *all* the bookmarks at once). Each bookmark appears as an individual Navigator file.—JS

Label Your Hyperlinks

77 Use descriptive names for your hyperlink sources and destination anchors in your Web authoring software's list of page links. After you've defined a few dozen links, you'll really appreciate having names that tell you what's being linked to what; there are very few things worse than having a list of items and you can't remember what they are.—GG

Launch a Slide Show

78 To flip through your Adobe PageMaker 6.5 document automatically, press the shift key while choosing Go To Page from the Layout menu. PageMaker displays a page (or spread), waits a few seconds, and then displays the next page or spread. You can cycle through until you click your mouse button.—GG

Quick Font Control

79 If you find yourself needing to change fonts in QuarkXPress often, here's a way to quickly access the font field in the Measurements palette. With the text box active and the text whose font you want changed selected with the Content tool, press shift-F9. Then type in the first few letters of the font you are changing to, press tab to move the cursor to the field for font size, type in the new point size, and press enter.—BA

Override Text Inset

80 The amount of text inset determines the distance that lies between the text and the boundary edges of the text box. For most documents, there really is no reason why you need any text inset at all—particularly for text that makes up the body of the document. But QuarkXPress defaults to an inset of 1 point. To permanently override this setting, choose Edit, then Preferences, then Tools to set the Text Box tool's inset to 0 (zero) points.—BA

Multiple Worksheet Magic in Excel

81 Everyone knows how to select multiple cell ranges in a Microsoft Excel document, but did you know you can select multiple worksheets by shift-clicking on the worksheet tabs at the bottom of the screen? By selecting multiple worksheets in this manner, you can delete a whole set of worksheets simultaneously, instead of one at a time. Or you can turn off gridlines in an entire workbook instead of on a sheet-by-sheet basis. And you can perform a search or spelling check on a whole workbook at once—normally, Excel restricts Find and Replace operations and spelling checks to the currently active worksheet only.—JS

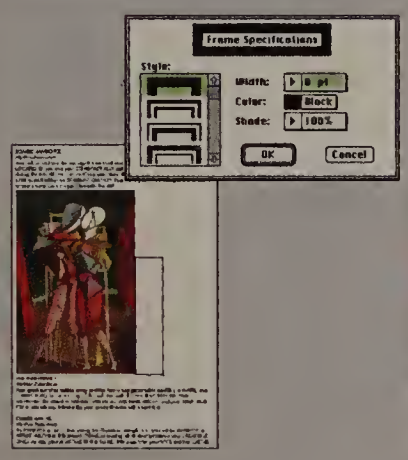
Quick Text Boxes

82 One complaint about ClarisWorks 4's word processor is that there isn't a command to create boxes around text, as you might do to set off a title or emphasize a point. There are two simple tricks you can use to create this effect; each creates a boxed text object around which you can wrap the normal document text. First, you can create a new text object in a word processing document by choosing the text tool, pressing the option key, and then dragging. Enter your text in the blank box and then choose a line width for your border from the tool panel. Second, you can embed a one-cell spreadsheet in your document and then box it by choosing

BONUS TIP

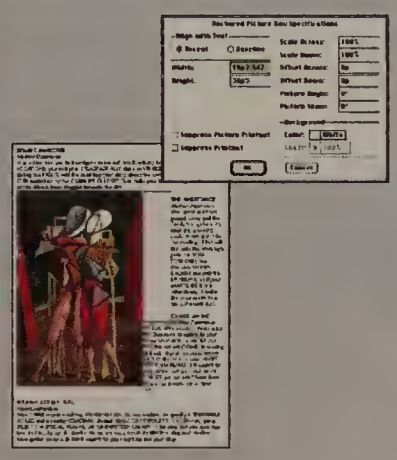
Giving the Runaround

Although QuarkXPress's Runaround command won't work with an anchored picture box—a picture box pasted into a text box (also known as an in-line graphic)—you *can* dynamically adjust the space between the box and the text alongside it.—SAK



Step 1

Create an empty, frameless picture box by selecting Frame from the Item menu (⌘-B) and set the width to zero. Copy or cut the now-frameless picture box and paste it within the text box next to your anchored picture box (on the side of the text).



Step 2

Select each anchored picture box in turn and, from the Anchored Picture Box Specifications dialog box (choose Modify from the Item menu or press ⌘-M), set Align With Text to Ascent.

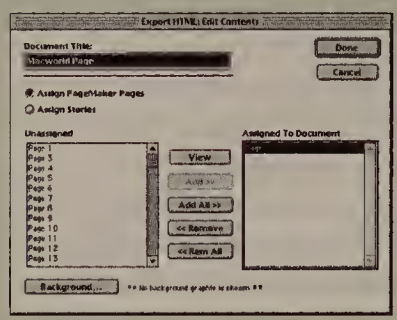
Step 3

Vary the amount the text is offset by widening or narrowing the empty picture box. The finished product looks much cleaner with text running around the photograph.

BONUS TIP

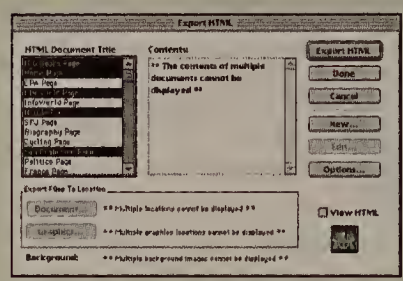
Exporting Multiple Linked Pages to HTML

When you export pages to HTML, Adobe PageMaker 6.5 merges all PageMaker pages specified into one HTML page. When you export PageMaker pages one at a time, links to other pages are lost in the resulting HTML pages. But there is an undocumented way to export multiple pages to HTML in a way that keeps them as separate HTML pages and retains any hyperlinks among them.—GG



Step 1

Create the HTML styles (using the New button in the Export HTML dialog box). You'll usually have one PageMaker page assigned to one HTML style, although if you want to merge several PageMaker pages into one HTML page, assign those pages to the HTML style. Do not assign multiple PageMaker pages to one HTML style if you want your pages to remain separate when exported to HTML.



Step 2

In the Export HTML dialog box, select each HTML style you want to export (the styles are listed under HTML Document Title). Use shift-click to select a contiguous range of styles, and ⌘-click to select noncontiguous HTML styles, as shown in the screen shot. Click on Export HTML to export the multiple pages. That's it!

the Borders command from the Format menu. Remove the grid letters, numbers, and other normally visible spreadsheet features by choosing the Display command from the options menu.—SS

Change Printers without Using the Chooser

83 To switch between two printers without going to the Chooser, use Apple's Desktop PrintMonitor software (part of System 7.6). Create desktop icons for printers with the Chooser. To change printers, simply select a desktop printer icon and choose Set Default Printer from the Printing menu that Desktop PrintMonitor adds to the Finder. Double-clicking a printer's icon opens a window in which you can control the print jobs waiting for that one printer; this makes PrintMonitor obsolete.—LP

We'll Be Meeting Every Week until Expo

84 To create a repeating event in Now Software's Now Up-to-Date without opening the Event Info window, just hold down the option key and drag the event to the day on which you want the event to repeat.—CP

Change a Subject Line

85 Sometimes you want to assign a different subject line to an e-mail than the one it arrived with, something that gives a better idea what the message is about or why you're saving it. In CE Software's QuickMail and Qualcomm's Eudora, while reading an incoming e-mail, simply hit the tab key and the cursor jumps up to the subject line, where you can enter a new subject.—WHN

Rotating the Grid

86 Here's an easy one: Want to rotate the new grid in Adobe Illustrator 7? From the File menu choose Preference, then General (⌘-K), and enter a new value in the Constrain Angle option box. Press return, and Illustrator rotates the grid to the angle you specified. Rectangles, ellipses, and even text automatically rotate to fit your new world view.—DM

Easy URL Minder

87 To make it easier to keep your Netscape Navigator Web-launching menu up-to-date, leave an alias of the folder containing your bookmark files out on the desktop. When you bookmark a Web site, drag the bookmark to the alias, making it available via the Apple menu.—JS

Expanding PageMill Tables the Easy Way

88 Despite what the Adobe PageMill 2 manual says, you can easily insert a row at the top of a table. With the table selected, hold down the option key and move the pointer over the top border of the table. When the pointer turns into a down arrow, click the mouse. A new row appears at the top of the table.—JSF

Delete without Guilt

89 To delete records in Claris FileMaker Pro 3 without encountering those annoying confirmation dialog boxes, use ⌘-option-E.—SC

Create Multiple Forms within PageMill

90 Adobe PageMill 2 allows you to create only one form per page. If you ever find the need to include more than one form on a page—for example, if you want to include access to two different search engines—just create a separate frame that runs horizontally across the page for each form.—JSF

Merge Files Easily

91 Merging files can be a nightmare. Fortunately, they're easy going in Claris FileMaker Pro 3. In Layout mode, use the text tool to create a text block and start typing the contents of your merge document. To insert a merge field, use ⌘-M—up pops the Specify Field dialog box, which lists every field in your database and in related files. FileMaker Pro 3 inserts the field along with the angle brackets (<< >>). When you print or browse, the fields automatically close up any empty space in the text block.—SC

Best Way to Save Bitmaps

92 Save bitmap files—whether gray scale, color, or black and white—in the size that you intend to use for a QuarkXPress layout. Enlarging a bitmap more than 20 percent can result in blocky-looking images, because the pixels that make up the image are enlarged along with the image itself.—BA

First Crop, Then Import

93 Do you wait to crop images in Adobe PageMaker rather than crop in your image editor because it's so easy to do? When you crop in PageMaker, the blank space left behind isn't really

blank—it's a series of white dots that continue to take up space in your file. An additional advantage to cropping first is that whoever handles the layout later has only the part of the image you want them to have.—GG

Excel's Name Game

94 Don't waste time hopping from cell to cell with the scroll bars—use Microsoft Excel's Name function, which lets you apply a name to a range of cells, and then navigate to those cells simply by choosing the name from a pop-up menu. Select a range of cells that you want to name and then click once in the Name box—the field on the far left edge of the formula bar. Type in a name (up to 31 characters, no spaces) and press return. Now, any time you want to return to the selected cell range, choose the name from the menu to the right of the Name box.—JS

How to Rotate Boxes but Not Graphics

95 You might want to rotate a picture box but keep the graphic inside the box at its original orientation in QuarkXPress. To do so, rotate the picture box and then press ⌘-M to open the Picture Box Specifications dialog box. In the Picture Angle field, enter the reverse value of the picture box's rotation angle. For example, if the picture box is rotated 33 degrees, set the Picture Angle at -33 degrees.—BA

Universal Preferences

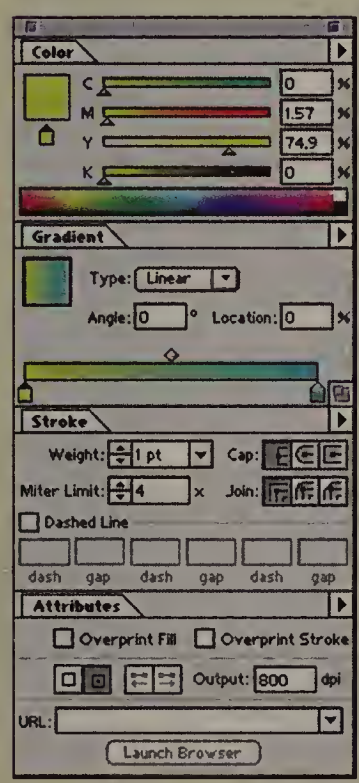
96 In Adobe PageMaker 6.5, if no document is open and you change settings in any of the preferences dialog boxes, or create or modify styles and colors, or adjust settings for the various tools, then your changes become the defaults for all future documents. To get quick access to the Preferences dialog box, double-click on the arrow-tool icon in the toolbox.—GG

New Text Settings for QuarkXPress

97 If you define text settings via the Style menu or Measurements palette in QuarkXPress and decide you want to create a style that contains these attributes, just position your text cursor anywhere on the text that has the desired settings. Then choose New in the Style Sheets dialog box (under the Edit menu). The new style you create automatically includes all settings. This is handy if you want to experiment with settings on dummy text before creating a style for future use.—BA

BONUS TIP

The Great Palette Collapse



In Adobe Illustrator 7, you can glue gobs of palettes to each other by dragging the tab from one palette onto the base of another. The result is a mega-palette like the gang of four above, which moves, collapses, and expands in one lump. To collapse the whole palette, click in the collapse box on the right side of the title bar. Expand individual palettes by double-clicking on their tabs.—DM

At Home on the Range

98 One-click navigation shortcuts are always better than endless scrolling or tabbing through a Microsoft Excel worksheet. Use the home key to scroll your spreadsheet to the top of your current column. ⌘-home teleports you to the first cell of the current worksheet, and ⌘-end zips you down to the last cell of the entire worksheet. If your work is spread across several worksheets, use option–left arrow and option–right arrow to move from worksheet to worksheet without clicking on the sheet tabs at the bottom of the screen.—JS

Change Columns Easily in PageMaker 6.5

99 Do you want to change the number of columns in an Adobe PageMaker 6.5 layout, but shy away from all the steps involved? Try this: instead of cutting an unwanted column, just select one of its windowshade handles. Then roll it up or down until it touches the other handle. That's it. If you select any other element and then try to reselect the original column, you'll find it's disappeared, and the text automatically reflows into the remaining columns. Then, just resize the text blocks to fit the new column layout. If you want to add a column, click on the + symbol at the bottom of any column's windowshade, then click the cursor where you want the new column to appear. The text flows from the windowshade with the + into the new column.—GG

How Can I Justify That?

100 Importing H&J (hyphenation and justification) sets in QuarkXPress is similar to importing styles: use the Append button in the H&Js dialog box (choose H&Js from the Edit menu). If you have no document open while importing H&J sets, you are copying all new H&J sets into your global defaults—those stored in your XPress Preferences file. This is a handy way to bring new H&J sets in without affecting existing H&J sets.—BA

Target Practice

101 To make sure you don't grab a column guide in Adobe PageMaker 6.5 while you are trying to select a neighboring graphic on the page with the arrow tool, press ⌘ as you select.—GG

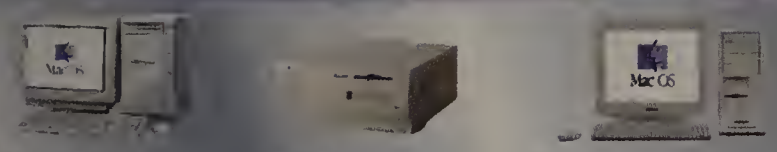
The following members of the *Macworld* staff, contributing editors, and Macophiles contributed these tips. Staff: Howard Baldwin (HB), Suzanne Courteau (SC), Cameron Crotty (CC), Elizabeth Dougherty (ED), Galen Gruman (GG), Mark Hurlow (MH), Carol Person (CP), and Jeff Sacilotto (JFS). Contributing editors: Erfert Fenton (EF), Deke McClelland (DM), Lon Poole (LP), and Joseph Schorr (JS). Macophiles: Eyal Arie (EA), Barbara Assadi (BA), Shane Devenshire (SD), Richard Hayes (RH), Swami Arumugam Katir (SAK), Howard Levitsky (HL), Wade H. Nelson (WHN), Paul Rubin (PR), John San Filippo (JSF), Steven Schwartz (SS), Adam Slim (AS), Gene Steinberg (GS), Nitin Verma (NV), and Mike Wakerly (MW).

To get more tips for using your Mac, e-mailed daily, sign up at *http://www.macworld.com/newsletters/*. m

IT PAYS TO

COMPARE

Compare APS M•POWER Mac OS-compatible computer systems to the competition and you'll choose an M•POWER system because feature for feature, value for value, the best deal available today in Mac OS compatible systems is only available from APS. Performance, configuration options, sheer computing power, whatever your criteria, you won't find more for less!



	M•POWER 604E200	POWERMAC 7300/200	POWERTOWER PRO 200 [CORE]
Processor	604e, 200MHz	604e, 200MHz	604e, 200MHz
Hard Drive	✔ 2.5GB	2GB	2GB
VRAM	✔ 2MB	✔ 2MB	✔ 2MB
Warranty	✔ 2 yr. limited	1 yr. limited	1 yr. limited
Price	✔ $1,899	$2,649	$2,695

All M•POWER systems are shipped complete with a floppy drive, ADB keyboard, ADB mouse, printer port, modem port, ADB port, SVGA monitor port (supporting 14", 15", 17" & 21" monitors), 2 PS/2 ports, SCSI port, IDE bus, ATAPI bus, 16-bit sound output port, rear headphone jack and a microphone jack to make computing much more enjoyable. All M•POWER systems are ready to grow with you – the M•POWER 603e180 and the 603e200 desktop systems have four internal bays, while the M•POWER 603e240 and the 604e200 tower systems have eight internal bays. These features and many more make the APS M•POWER system the best value in the market today.

*Monitors sold separately. Filling all available drive bays may exceed power limitations.

M•POWER 604e200

$1899*

Part #7100-STDH

Includes:

- 12X CD-ROM
- 24MB of DRAM
- 2.5GB Hard Drive
- Floppy Drive
- 2MB of VRAM
- 512K L2 Cache
- ADB Keyboard & Mouse
- 2-Year Limited Warranty
- Optional 5-Year Service Contract

Mini-Tower Model

- Three 5.25" Internal Bays
- Four 3.5" One-inch High Int. Bays
- Five PCI Expansion Slots

M•POWER 603e240

$1799*

Part # 7008-STD

Includes:

- 12X CD-ROM
- 24MB of DRAM
- 2.5GB Hard Drive
- Floppy Drive
- 1MB of VRAM
- 512K L2 Cache
- ADB Keyboard & Mouse
- 2-Year Limited Warranty
- Optional 5-Year Service Contract

Mini-Tower Model

- Three 5.25" Internal Bays
- Four 3.5" One-inch High Int. Bays
- Five PCI Expansion Slots

M•POWER 603e200

$1599*

Part # 7000-DLXI

Includes:

- 12X CD-ROM
- 24MB of DRAM
- 2.5GB Hard Drive
- Floppy Drive
- 1MB of VRAM
- 256K L2 Cache
- ADB Keyboard & Mouse
- 2-Year Limited Warranty
- Optional 5-Year Service Contract

Desktop Model

- Two 5.25" Internal Bays
- Two 3.5" Internal Bays
- Three PCI Expansion Slots

Mini-Tower Model

- Three 5.25" Internal Bays
- Four 3.5" One-inch High Int. Bays
- Five PCI Expansion Slots

M•POWER 603e180

$1199*

Part # 7006-STD

Includes:

- 12X CD-ROM
- 16MB of DRAM
- 1.2GB Hard Drive
- Floppy Drive
- 1MB of VRAM
- ADB Keyboard & Mouse
- 2-Year Limited Warranty
- Optional 5-Year Service Contract

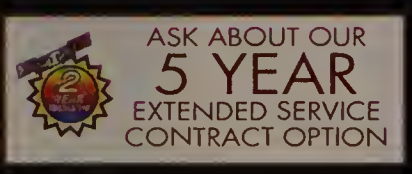
Desktop Model

- Two 5.25" internal bays
- Two 3.5" internal bays
- Three PCI Expansion Slots

Mini-Tower Model

- Three 5.25" Internal Bays
- Four 3.5" One-inch High Int. Bays
- Five PCI Expansion Slots

604e200 ◆◆◆◆ MacWEEK
603e245 ◆◆◆ MacWEEK
603e200 ◆◆◆ MacWEEK
603e180 ◆◆◆ MacWEEK



PowerPC is a trademark of International Business Machines Corp. and is used by Motorola, Inc. under license from International Business Machines Corp. Microsoft is a trademark of Microsoft Corporation. Mac OS is a registered trademark of Apple Computer, Inc. M•POWER, APS and APS Technologies are registered trademarks of Alliance Peripheral Systems, Inc. Other brand or product names are registered trademarks or trademarks of their respective holders. Prices and specifications are subject to change without notice. The APS M•POWER systems are not covered by a 30 day money-back guarantee.

APS Technologies

THE NAME TO REMEMBER IN MACINTOSH COMPATIBLE PRODUCTS!

Call this special number **800-926-0693**

See pages 166-167 in this issue for more information about M•POWER Systems and APS peripherals.

Circle 61 on reader service card

The World's Finest Digital Colors Have A New Name

Aficio Color™

The Future Of Digital Imaging

Welcome to the Aficio Color series. From Ricoh. Vibrant color that delivers eye-catching presentations. Connectable color copiers that turn the world's smallest toner particles into the world's finest colors. Digital brainpower that offers a whole new array of image-manipulation and document-handling options. Effortless. Reliable. Digital. And affordable. Come see the Aficio Color series from Ricoh. See what we can't show you here. A real Aficio color copy. Call 1 800 63 RICOH. Or online at http://www.ricoh.com

© 1996 Ricoh Corporation.

THE NAME TO KNOW
RICOH

Circle 4 on reader service card

Left to right, the Sony Multiscan 200sf, Portrait Displays Pivot 1700, and ViewSonic Optiquest V773.

17-inch

Macworld Lab Examines 31 Monitors Close-Up to Find the Best Buys

Screen Stars

Macworld LAB TEST

by Peter M Stoller

LIKE ASPIRING HOLLYWOOD ACTORS, MOST MACINTOSH users yearn for a shot at the big screen—only, in Mac parlance, that means a big monitor. How big is "big," though? Desktop publishers and graphic designers may want every inch of a 21-inch monitor, but at an average price of $1500, one of those can devour your desk and your wallet faster than you can say *Waterworld.*

If that would be an epic disaster for your bank account, consider a 17-inch monitor. With about half the pixels for half the money, a 17-inch monitor still offers plenty of virtual desktop room for image editing or spreadsheet work, and more real desktop room for your coffee mug. Also, because limitations of tube technology make consistent color, brightness, and focus harder to achieve at larger sizes, 17-inch monitors actually tend to deliver better image quality than their colossal cousins do. That makes it easier to shop for features and price without compromising on the picture.

Still, not all 17-inch monitors are created equal. *Mac-*

world's expert panel of graphic designers, editors, and lab analysts put 31 popular models on the casting bench to determine which pictures are easiest on the eyes and which controls are easiest on the brain (as well as fingers). Then we compared prices and rated all 31 monitors accordingly. We found seven excellent (four-star) choices for a street price of $800 or less, and even one acceptable alternative as low as $500.

17-Inch Monitors Compared

Company	Product	Star Rating*	List Price/ Company's Estimated Price**	Phone
Apple Computer	AppleVision 1710	★★★★/7.4	NP/$799	408/996-1010
	Multiple Scan 1705 Display	★★★/5.1	NP/$649	408/996-1010
Eizo Nanao Technologies	FlexScan FX-C5	★★★/6.5	$948/$853	562/431-501
	FlexScan TX-C7S	★★★/6.7	$1299/$1125	562/431-501
Hansol Multitech	Mazellan 17PX	★★★★/7.0	$899/$750	714/562-5151
Hitachi/NSA	RasterOps SuperScan Mc 600	★★★/5.3	$799/$599	617/461-8300
	RasterOps SuperScan Mc 611	★★★/5.1	$949/$749	617/461-8300
Iiyama North America	VisionMaster 17	★★★/6.8	$799/$710	215/957-6543
	VisionMaster Pro 17	★★★★/7.2	$899/$799	215/957-6543
KDS	Visual Sensations VS-9	★★★/5.4	$753/$699	714/379-5599
Mag Innovision	DJ702e-M	★★★/5.5	$659/$629	714/751-2008
	DX700T-M	★★★/5.5	$799/$699	714/751-2008
Mitsubishi Electronics America	Diamond Pro 87TXM	★★★★/7.2	$829/$799	714/220-2500
NEC Technologies	MultiSync P750	★★★★/7.3	NP/$899	630/775-7900
	MultiSync XV17+	★★★/6.9	NP/$749	630/775-7900
Nokia Display Products	Multigraph 447Xi	★★★/6.4	$925/NP	415/331-4244
Pacom Data	Crystal Lake 17	★★/3.9	$549/$499	408/764-0590
Panasonic Computer	PanaSync S17	★★★/6.7	$729/$629	201/392-4500
	PanaSync/Pro P17	★★★/6.4	$899/$799	201/392-4500
Portrait Displays	Pivot 1700	★★★/6.9	$1099/$900	510/227-2700
Princeton Graphic Systems	EO75-M	★★★/6.2	$799/$699	714/751-8405
	EO76-M	★★★/5.8	$799/$720	714/751-8405
Sampo Technology	AlphaScan 711	★★★/6.1	$599/$499	770/449-6220
	AlphaScan 760	★★★/6.0	$799/$699	770/449-6220
Samsung Electronics America	SyncMaster 17GLi	★★★★/7.1	$789/$715	201/229-4000
	SyncMaster 17GLsi	★★★★/7.0	$1019/$929	201/229-4000
Sony Computer	Multiscan 17sell	★★★/6.8	NP/$999	408/894-0555
	EDITORS' CHOICE Multiscan 200sf	★★★★/7.5	NP/$799	408/894-0555
ViewSonic	Optiquest V773	★★★★/7.1	$599/$579	909/869-7976
	PT775	★★★/6.4	$999/$945	909/869-7976
Wyse Technology	WyseVision WY-782D	★★★/5.5	$949/$669	408/922-4300

*NP = not provided. * Based on features, implementation, innovation, performance, reliability, ease of use, and value. (See Star Ratings*

Screen Test

In this business, looks count. A poor display causes discomfort and potentially hazardous eyestrain, so look for a screen image that's bright, vivid, and sharp. We were impressed with nearly all these monitors, but a few stood out at either extreme.

Most critical to image quality is focus. *Macworld*'s panel tested every monitor with a full-screen spreadsheet, checking for sharp lines and legible text across the entire display area. You want sharp, clear characters, as we saw on the VisionMaster Pro 17 from Iiyama (*http://www.iiyama.com*), the SyncMaster 17GLsi from Samsung (*http://www.sosimple.com*), and the EO75-M from Princeton Graphic Systems (*http://www.prgr.com*). Least sharp, though still very usable, were the Mazellan 17PX from Hansol Multitech (*http://www.hansol-us.com*) and the Multigraph 447Xi from Nokia (*http://www.nokia.com*).

Brightness is next on the list. A good monitor can shine through bright ambient lighting conditions from the morning sun to glaring office fluorescents. Studying a full-range gray-scale photo on each screen, our experts tagged the AlphaScan 760 from Sampo as the brightest of all, with Eizo Nanao's (*http://www.eizo.co.jp/welcome/*) FlexScan TX-C7S not far behind. On the dark side, the Crystal Lake 17 from Pacom Data (*http://www.pacomdata.com*) and the DX700T-M from Mag Innovision (*http://www.maginnovision.com*) couldn't hold a candle to the rest.

Equally important is contrast. You want to see deep blacks alongside those bright whites, and clear distinctions of all the gray levels in between. This gives images depth and definition, as we saw in our gray-scale photo on the FlexScan TX-C7S. Lower-contrast monitors such as the Crystal Lake 17 and DX700T-M present a relatively dull picture.

Colors should be rich, brilliant, and realistic. We evaluated color with an Adobe Photoshop image created by *Macworld* especially for displaying everything from saturated primary colors to subtle shades and flesh tones. Especially impressive were the vibrant AlphaScan 760, the EO75-M, and the WyseVision WY-782D from Wyse Technology (*http://www.wyse.com*). A strong blue cast made the Crystal Lake 17 the only monitor with unacceptable color. The Multiscan 17seII from Sony (*http://www.sony.com/technology/*) had a slight but noticeable magenta cast.

At least the Multiscan 17seII allows you to customize the color balance to correct for such anomalies or compensate for different lighting conditions; the Crystal Lake 17 is limited to two preset color temperatures. The Options button in the Monitors control panel gives you access to page-white and uncorrected gamma settings in addition to the default Mac standard, but these settings are far too coarse for precise color control. (For more about adjusting display characteristics, see the sidebar, "Taking Control—How Easy Is It to Get the Best from Your Monitor?")

Viewable Area (w × h, in inches)	Warranty (in years) for Parts/CRT/Labor	Comments
NP	1/1/1	Affordable, but what really sets the 1710 apart are excellent software controls.
12.6 × 9.5	1/1/1	Good image quality tends to distort at high brightness; cheap buttons with no color controls and no on-screen display.
12.6 × 9.4	3/3/3	Hardware controls take some getting used to, and at this price the excellent software controls (a $25 option) should be included.
12.8 × 9.5	3/3/3	Excellent image quality and software interface, but is exorbitantly expensive.
12.6 × 9.5	3/2/3	Good image quality, elegant hardware controls, and a competitive price.
12.8 × 9.7	3/3/3	Slightly clunky control interface, but decent picture and low price make this a fair contender for the budget buyer.
12.8 × 9.7	3/3/3	Is too pricey for merely average image quality and hard-to-see controls.
12.6 × 9.4	3/3/3	Great image quality at a fine price; comprehensive but convoluted controls.
12.8 × 9.6	3/3/3	Beautiful, feature-rich, and well priced; comprehensive but convoluted controls.
12.8 × 9.5	3/1/2	Good-looking but saddled with inelegant controls and inflexible swivel stand.
13.0 × 9.6	3/2/1	Good image quality and low price, plus a cool Jag wheel control.
12.9 × 9.8	3/2/1	Sharp image, sensible controls, and good price, but too dim for the top tier.
12.8 × 9.5	3/3/3	Solid image quality, top-notch hardware and software controls, and a realistic price—a good contender.
12.4 × 9.3	3/3/3	A bit pricey but worth it for a brilliant picture, and excellent controls.
12.4 × 9.3	3/3/3	Rich colors and standard-setting on-screen controls at a good price.
12.6 × 9.3	3/2/3	Great color and great controls, but above-average price. Centrally located power button is too easy to hit accidentally while using the controls.
12.6 × 9.4	3/3/3	Sharp picture and rock-bottom price, yet no bargain, due to dim, blue picture; limited features; and hard-to-use controls.
12.8 × 9.6	3/3/3	Good picture quality, controls, price, and support—a solid, sensible selection.
12.8 × 9.6	3/3/3	Doesn't beat the less costly PanaSync S17 by enough to warrant a higher price.
12.7 × 9.4	3/3/3	Unique pivoting feature isn't cheap, but it's the only one around.
12.7 × 9.5	3/3/3	Good looks and price; too bad about its poor controls and cheesy stand.
12.9 × 9.6	3/3/3	Poor on-screen controls, but good picture and price make it a fair deal.
12.6 × 9.5	3/2/2	Limited color features and on-screen controls, but a great picture and price.
12.6 × 9.5	3/2/2	User-unfriendly controls make what could have been a great deal merely good.
12.6 × 9.5	3/3/3	Good-looking display and snazzy controls; the price tag's right on the money.
12.6 × 9.5	3/3/3	Bests the excellent 17GLi, adds custom color controls—and hikes the price.
12.9 × 9.5	3/2/3	Slight magenta cast and high price count against this exceptional unit.
12.9 × 9.5	3/2/3	Sony's lauded Trinitron quality, elegant interface, at a surprisingly low price.
12.7 × 9.5	3/3/1	The best combination of image quality and controls for under $600.
12.8 × 9.7	3/3/3	Very good image quality and controls, but they don't merit this price.
12.9 × 9.7	3/3/3	Picture and price are equally compelling, but has awkward controls.

section for full explanation.) ** *Actual prices could be higher or lower than the estimated street price provided by the company.*

Wading through Specs and Hype

Monitor vendors toss a lot of terminology around to hype their products. Don't let that sway you. Look at the screen, not at the spec sheet.

All cathode-ray tubes (CRTs) contain a thin metal mask that helps keep the electron beams trained on the correct phosphor elements in the tube to project a clear image on screen. Shadow-mask monitors contain phosphor dots; aperture-grille monitors (Trinitrons and DiamondTrons) have phosphor stripes. The new Croma-Clear CRT from NEC (*http://www.nec.com*) is essentially a hybrid of the other tube types, using elliptical phosphors. The three types look different, but none is inherently better. Also, all these tubes have equally effective antiglare and antistatic screen coatings.

Dot, *grille*, and *mask pitch* refer to the distance between the dots or stripes used to display the image. Smaller numbers mean a finer resolution of details, but as with CRT type, those numbers didn't correspond with our panel's preferences. Even the largest dot pitch yielded a crisp picture.

Some of these monitors can display as many as 1280 by 1024 pixels, but cramming two pages' worth of information onto a 17-inch screen is generally impractical. At such high resolutions, details are too small to see, and the number of pixels can exceed the number of dots or stripes available to display them.

Another figure *not* to worry about is refresh rate. Vendors boast fast maximum refresh rates for their monitors, but the actual rate is determined by the Mac's built-in or card-based video circuitry, not the monitor. Thus, all these monitors will refresh at the same rate on your Mac.

If you're concerned about energy conservation and low-frequency emissions, relax: every one of these monitors meets or exceeds both the Environmental Protection Agency's standards for energy efficiency and the Swedish government guidelines for low emissions.

Buying Tips

While our panel's responses are an excellent guidepost, you're the one who's going to be living and working with this monitor. What matters is how comfortable you are with the image quality, controls, and credit card bill. Shop for your needs and tastes, using the types of tests we describe above. Trust your eyes above all else. If you can't find the model you want to evaluate properly displayed at a local dealership, mail-order it from a dealer offering a minimum 30-day unconditional money-back guarantee and no restocking fee.

Don't succumb to feature-itis; more features don't make a better monitor. Concentrate on features you need—don't sweat the color controls if you do mostly word processing—and on how easy it is to use the features you'll access regularly, such as brightness and contrast.

Ask about service and support. Of the 19 vendors in our survey, 12 offer a standard three-year warranty for parts, labor, and the CRT, but the rest have shorter terms for the CRT or labor. Apple offers the skimpiest warranty: one year across the board. On the plus side, some companies—including Hansol, Iiyama, KDS, and, for corporate customers, Mitsubishi—will advance-ship replacement units within 48 hours, and Panasonic will replace monitors on site within the first year.

Finally, make sure the monitor includes

HARDWARE CONTROLS

On-screen menu controls are a hit with manufacturers; the only monitors without them are the Pivot 1700, from Portrait Display (*http://www.portrait.com*), because it's impractical to make the menu pivot with the monitor, and the Apple Multiple Scan 1705 Display. However, on-screen controls were less popular with our panel.

The on-screen display and the hardware used to operate it should be clear, intuitive, and well integrated. Our panel preferred controls that offer both graphic and numeric on-screen feedback, with dedicated physical buttons rather than multilevel menus for directly accessing display parameters. Sony's Multiscan 17sell and Multiscan 200sf both provide a perfect example of this, with large, well-organized, clearly labeled buttons (see A) that let you adjust practically everything within a single menu level. Also popular, Hansol's Mazellan 17PX makes you go to a second menu level to adjust parameters, but its menus and beautiful buttons are particularly intuitive (B).

Unfortunately, many vendors oversimplify the hardware while complicating the menus. Eizo Nanao's FlexScan monitors confused our panelists with a single, square button that has a dot in the center and an arrow on each side—essentially, five buttons in one (C). (Also, the button's right-hand placement is unfriendly to lefties.) The WyseVision WY-782D and Mag Innovision DJ702e-M's integrated wheel-and-button interfaces share the right-hand bias and all-in-one control concept of the FlexScans (D), as well as having menus that make it necessary for you to scroll past every feature to exit.

A Sensible Sony The controls on the Multiscan 17sell are clearly identified and organized, so you are neither overwhelmed with buttons nor put through a maze of menus.

C Not-So-Easy Eizo Nanao Sometimes less really is less. The single, five-way button that serves as the control on the FlexScan FX-C5 and FlexScan TX-C7S perplexed our panelists.

B Handsome Hansol The Mazellan 17PX's buttons are labeled and arranged for ease of use, and they look and feel luxurious.

D Wyse Technology The WyseVision WY-782D uses a decidedly unwise thumb-button and roller-control combo that's too awkward to be practical.

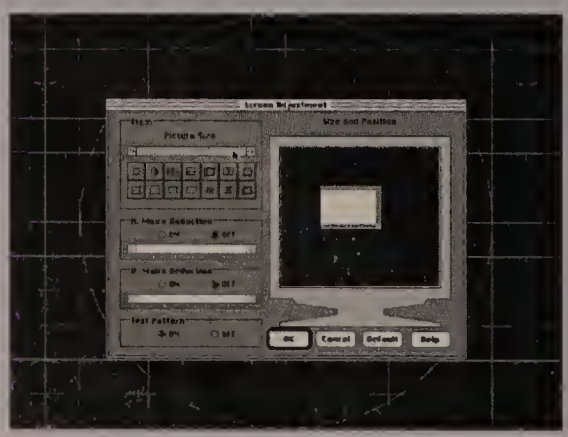
SOFTWARE CONTROLS

No matter how well implemented they are, on-screen controls for adjusting your display still aren't integrated with the rest of the computer system. Their interfaces are foreign (and generally inferior) to that of the Macintosh OS.

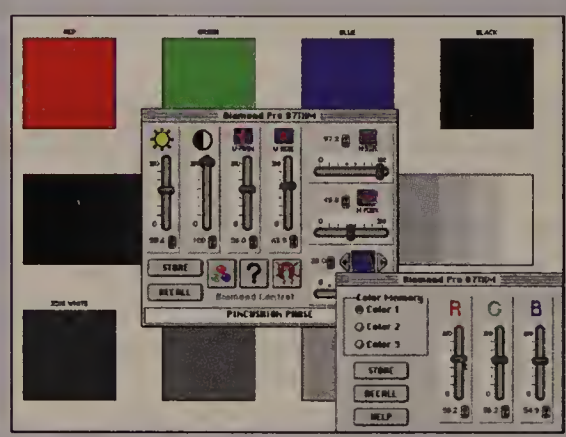
Eizo Nanao offers a vastly superior alternative in its Screen Manager Pro software (E). With a serial cable between the Macintosh and the monitor, you can use this application's Mac interface and your mouse to control your monitor. Mitsubishi has a comparable program called Diamond Control (F).

Apple (*http://www.apple.com*) has similar controls for its AppleVision 1710 Display (G). The AppleVision software, however, acts as a plug-in to Apple's Monitors & Sound control panel, which opens in place of an on-screen menu when you push the monitor's control buttons. The interface between the monitor and the Macintosh is an ADB cable, so you can use the monitor software all the time without having to tie up a serial port.

Six vendors—Eizo Nanao, Hitachi/NSA, Iiyama, Mitsubishi, Nokia, and Samsung—bundle Colorific color-calibration software from Sonnetech (*http://www.colorific.com*). Using this software, you match graduated gray and color squares on screen to one of two special vinyl overlays—one for fluorescent lighting and one for incandescent—setting the monitor's color temperature and gray-scale midpoint. Colorific works with Apple's ColorSync to match on-screen colors to printed output.



E Nanao Geometry The test patterns in Nanao's Screen Manager Pro help make adjusting display characteristics a snap.



F Diamond Control Mitsubishi's Diamond Control lets you quickly and easily slide or nudge any display parameter to a precise value.

G AppleVision Apple's AppleVision software controls are well organized, comprehensive, and very easy to use.

Macworld LAB TEST

17-Inch Monitors: Image Quality

Past testing has demonstrated that objective measurements of monitor brightness, contrast, and distortion do not reliably indicate image quality, so Macworld Lab conducted only subjective testing. As the scores below indicate, the top-ranking monitor for image quality has lots of close competitors. Before you buy, compare individual scores for any factors that are especially critical to your work—color, brightness, and contrast for desktop publishing; distortion and focus for spreadsheets, CAD, and fine-line design.

Best result in test. Longer bars are better. Products are listed from best overall to worst overall.

	Overall Score	Color	Brightness	Contrast	Distortion	Focus
Sampo AlphaScan 760	1.00	4.3	4.4	3.6	3.6	3.5
NEC MultiSync P750	0.99	3.8	3.8	3.9	4.0	3.6
Eizo Nanao FlexScan TX-C7S	0.98	3.6	4.0	4.0	3.8	3.6
ViewSonic Optiquest V773	0.97	3.9	3.4	3.9	3.9	3.7
Princeton Graphic Systems EO75-M	0.97	4.0	3.8	3.6	3.5	3.9
Iiyama VisionMaster Pro 17	0.96	3.5	3.4	3.8	4.1	3.9
Iiyama VisionMaster 17	0.96	3.9	3.8	3.9	3.6	3.5
Samsung SyncMaster 17GLsi	0.95	3.5	3.8	3.8	3.5	3.9
Sony Multiscan 200sf	0.94	3.9	3.5	3.8	3.9	3.3
Mitsubishi Diamond Pro 87TXM	0.94	3.9	3.4	3.5	3.8	3.6
WyseVision WY-782D	0.93	4.1	3.4	3.4	3.6	3.6
Panasonic PanaSync S17	0.93	3.7	3.6	3.6	3.6	3.5
Portrait Displays Pivot 1700	0.93	3.8	3.6	3.4	3.8	3.5
Sampo AlphaScan 711	0.92	3.6	3.8	3.8	3.1	3.6
Eizo Nanao FlexScan FX-C5	0.91	3.9	3.3	3.6	3.3	3.6
Panasonic PanaSync/Pro P17	0.91	3.8	3.4	3.4	3.5	3.6
Nokia Multigraph 447Xi	0.90	3.9	3.6	3.3	3.9	2.9
Mag Innovision DJ702e-M	0.90	3.6	3.5	3.5	3.5	3.3
NEC MultiSync XV17+	0.90	3.9	3.5	3.8	3.3	3.0
Samsung SyncMaster 17GLi	0.89	3.8	3.4	3.1	3.8	3.3
Apple Multiple Scan 1705 Display	0.88	3.4	3.4	3.3	3.6	3.5
ViewSonic PT775	0.88	3.6	3.3	3.4	3.5	3.4
KDS Visual Sensations VS-9	0.88	3.9	3.5	3.1	3.5	3.0
Sony Multiscan 17sell	0.88	2.9	3.1	3.3	4.0	3.8
Princeton Graphic Systems EO76-M	0.85	3.8	3.0	3.0	3.3	3.5
Apple AppleVision 1710	0.85	3.5	3.1	3.1	3.5	3.1
Hitachi/NSA RasterOps SuperScan Mc 611	0.84	3.6	2.9	2.8	3.6	3.4
Hansol Mazellan 17PX	0.82	3.6	3.1	3.3	3.0	2.9
Hitachi/NSA RasterOps SuperScan Mc 600	0.79	3.3	2.8	2.8	3.4	3.3
Mag Innovision DX700T-M	0.77	3.0	2.5	2.6	3.5	3.4
Pacom Data Crystal Lake 17	0.72	2.4	2.1	2.5	3.3	3.8

Behind Our Tests

A panel of *Macworld* editors, designers, and art directors evaluated each product and gave it a subjective score from 1 to 5 (with 5 representing a perfect score) in the following critical areas: color quality and accuracy, contrast, brightness, and focus. To gauge color fidelity, the panel members compared each monitor's screen image of a 24-bit color Adobe Photoshop file; to gauge contrast and brightness, they looked at a 24-bit gray-scale Photoshop file; and to gauge focus and distortion, they examined the grid and varying-size text of a Microsoft Excel spreadsheet.—**Macworld Lab testing supervised by Matt Clark**

a Mac adapter or cable. Of the surveyed vendors, only Pacom and Wyse make no provision for Mac adapters, leaving you to drop $20 on a third-party adapter. (Adapters from companies such as Liberty and UniMac are available where monitors are sold.) Some monitor vendors arrange to have dealers provide adapters free on request, so don't forget to ask.

Macworld's Buying Advice

With so many fine monitors, it was no easy task picking an Editors' Choice. On balance, Sony's Multiscan 200sf emerged with solid to exceptional ratings in every performance and interface category, and with a very reasonable price.

For big-money performance under $600, you can't go wrong with the all-around highly rated Optiquest V773 from ViewSonic (*http://www.viewsonic.com*). Serious bargain hunters will probably forgive the Sampo AlphaScan 711 its somewhat clunky controls, because image quality this good at a street price under $500 is a steal.

Ultimately, though, all of our four-star monitors are good deals, with the star quality to be a big hit soon on a Macintosh desktop near you. **m**

PETER M STOLLER (*afcpeters@aol.com*) is a Macintosh consultant and possibly the only freelance writer in Hollywood not working on a screenplay.

EDITORS' CHOICE

★★★★/7.5 **Multiscan 200sf** Of 31 monitors, this elegant, thoughtfully designed product had the best balance of image quality, control, interface, and value. **Company:** Sony Computer (408/894-0555, *http://www.sony.com/technology/*). **Company's estimated price:** $799.

REAL PRODUCTS REAL RATINGS

Reviews you can trust Unlike other publications, *Macworld* rates only final shipping products, not prototypes. What we review is what you can actually buy.

MACWORLD

EXPO

BAYSIDE EXPOSITION CENTER & WORLD TRADE CENTER

Owned & Produced by:

IDG WORLD EXPO

Sponsored by:

Macworld

Managed by:

MHA EVENT MANAGEMENT

UNLEASH THE POWER OF YOUR MACINTOSH!

Attending MACWORLD Expo/Boston is the best way to reap the full benefits of Macintosh computing. The product offerings at retail stores are no match for the breadth of choice you'll find at MACWORLD Expo. Catalogs may offer variety, but no opportunity to see demonstrations or ask questions. Only MACWORLD Expo lets you experience the full scope of Mac computing, with thousands of solutions for: • Web site design and Internet navigation • publishing, entertainment and multimedia • networking, enterprise-wide connectivity, and intranets • education, R&D, research • business and telecommuting

The Mac universe is 60 million users strong. Exchange information with over 50,000 of the most innovative, ingenious, and committed users at MACWORLD Expo/Boston. Network at special interest areas and pavilions that are open to all attendees. Learn from the experts... share experiences with your peers... keep abreast of trends in more than 80 conference sessions, including NEW half-day tutorials. MACWORLD Expo opens your mind to new horizons accessible only through your Mac.

CONSIDER THIS FACT: OVER 2,400 NATIVE APPLICATIONS FOR POWER MACINTOSH HAVE SHIPPED SINCE THE PLATFORM'S INTRODUCTION IN MARCH 1994. MULTIPLY THAT FIGURE BY OTHER POPULAR MAC MODELS AND ADD IN ALL THE HARDWARE, PERIPHERALS AND CUSTOM SERVICES THAT BRING FUNCTIONALITY TO YOUR MAC. WITH SO MANY PRODUCTS AVAILABLE TO BOOST PERFORMANCE AND CREATIVITY, YOUR MAC HAS NEVER HAD MORE POWER POTENTIAL THAN IT DOES TODAY. SEE THE BEST AND LATEST OF THESE ENHANCEMENTS AT MACWORLD EXPO/BOSTON!

PRE-REGISTER BY JULY 7 AND SAVE!

Maximize savings and value by pre-registering for the combined conference and exhibits package. For just $170, a $25 savings over the at-the-door price, you'll get one day of tutorials and three days of conference sessions, keynotes and unlimited access to the exhibit floor. Exhibits-only pre-registration is just $25, saving you $15. By registering before July 7, you'll receive your admission badge in the mail (except international pre-registrants), so you can walk straight into MACWORLD Expo and start exploring.

Conference:
AUGUST 5-8, 1997
Exhibits:
AUGUST 6-8, 1997

BOSTON

Macworld EXPO

THE CONFERENCE PROGRAM

Macworld EXPO

THE MACWORLD EXPO CONFERENCE MAXIMIZES YOUR MAC INVESTMENT

Multiply your profits and productivity! Solutions by the score and virtually unlimited possibilities are presented to you on August 5-8. MACWORLD Expo's conference sessions provide a powerhouse of tested tips, informed insights, and triumphant techniques for every imaginable use of the Macintosh: in offices large and small, in schools, at home, and on the road. Some of the most accomplished users and knowledgeable insiders in the world of Macintosh will answer your questions and show you even more ways to profit from your Mac.

HERE'S A PREVIEW OF THE 10 SEPARATE CONFERENCE TRACKS & INDIVIDUAL SESSIONS:

A. The *Macworld* Magazine Track

Macworld's editors, columnists, and featured guests present living pages of the magazine's hottest topics.

• The New-Generation Mac • Rhapsody in Blue: The NeXT Mac • *Macworld* Magazine's Best of Show • Illustrator/Freehand/Canvas/CorelDraw Shootout! • Become Your Own Troubleshooting Guru • The Best of *Macworld's* MacSecrets

B. The Design/Art/Prepress Track

Top graphic arts industry professionals share their expertise and experience — plus their best tips to provide you with an insight into the future of breakthrough technologies. [See also Half-Day Tutorials for additional sessions on these topics.]

• Web Graphics Mentors • Bringing Concepts to Life through Imaging • Kai's Killer Tips and Tricks • Color Correction in Photoshop • Digital Photography • The Digital Ad Agency • Advanced Imaging for Professionals • From the Screen to the Printed Page • Vectors and/or Pixels

C. The Web Master/Web Creativity Track

The Macintosh is the premiere vehicle for the creation of content on the Web. Get a leg up on the Web (and your competition) with this full track of sessions designed to help you cruise, serve, and populate the 'net. Give your business the Macintosh/Web advantage! [See also Half-Day Tutorials for additional sessions on these topics.]

• Choosing a Web Server • Choosing/Using Tools for the Coolest Web Site • Web Databases • VRML: Get Your Avatar On-line! • The Power of PUSH: Webcasting/Web Broadcasting • Electronic Commerce on a Mac Web Site • Web Objects • Web Page Navigation and Content Structure • Building Interactivity into Your Web Site

D. NEW! The Creating Content Track

The increasing power of the Mac — coupled with the global reach of the World Wide Web — offers unparalleled opportunities for creating entertainment and other compelling content. In these sessions designed specifically for digital content creators, designers, video producers, filmmakers, and multimedia professionals, you can learn from the pros and have fun while you're doing it! [See also Half-Day Tutorials for additional sessions on these topics.]

• Developing Interactive Games • Video for the Web • The 3 Ts of 3D: Trends, Tools, Techniques • Interface by Design • Multimedia Authoring in a World of Hybrid Media • DTV Production Update • Designing Rich Content in a Low Bandwidth World

E. The Operating System/Connectivity Track

The unique power of the Macintosh lives in its Operating System and Extensions. Learn how to harness that power, extend and protect it with third-party additions, manage your computer for better productivity, and build fast, easy-to-use networks for printing and sharing files and using the Internet.

• Essential Network Management Tools in a Cross-Platform World • Justifying Macs in a PC Environment • Virus Protection, Security, and Privacy • Network Operating Systems and the Mac • Apple Extensions Explained • Supporting High-Speed and High-Utilization Networks • TCP/IP Report

F. The Small Office/Home Office (SOHO) Track

Never before has it been easier – or more fun! – to launch and operate a small company, a home-based business, or a home office for telecommuting. Hear experts share their insights on how YOU can increase productivity and slash costs!

• Using the Latest and Greatest to Run Your Small Business • The Internet for Small Business • Small Business Success Secrets • Marketing Your Small Business with Your Mac

G. The Tools Workshops

Intensive training sessions on some of the most popular Macintosh tools, presented in a totally non-biased format by the award-winning staff of MacAcademy.

• Mastering the Macintosh: Intermediate to Advanced • Claris Works • Adobe PageMill • Adobe Photoshop • QuarkXPress • Macromedia Director

H. The Educators Track

An excellent opportunity for educators, administrators, and students to show and be shown new and classic examples of how the Macintosh positively shines as a teaching tool – in these sessions presented for educators, by educators.

• Maximizing the Mac in Education • Maintaining Sanity and Productivity Within your Computer Lab • Solving Your Classroom Computer Nightmares • Building a Curriculum-Based Intranet • Cool Computer Curriculum Projects! • The Internet for Educators

I. The Special Interest Group Track

Sessions for "birds of a feather" looking to compare Mac notes with others in a similar setting – to solve special problems, to see how colleagues across the continent are getting more mileage out of the Mac, and to develop an invaluable "user network."

• Macs in the Law Office • Macs in Science and Technology • MACWORLD Expo User Group Extravaganza (MUSE)

J. The You-Asked-For-It Track

A combination of perennial MACWORLD Expo favorites, plus brand-new topics in response to your special requests, with up-to-the-minute market developments. For starters:

• On-line Survival Guide • Mobile Computing on Macs: Tips for Road Warriors! • Beginner Java • Beyond Beginner Java • Getting Started with HTML • Customizing Your Mac • Resolving System Conflicts • Audio, Sound, and Music Tools

New!

HALF-DAY TUTORIALS

Tuesday, August 5th

By popular demand! The opportunity for you to enjoy an in-depth learning experience on Macintosh topics of vital interest — presented by some of MACWORLD Expo's highest-rated speakers!

- **Designing Web Graphics**
- **How to Build Your Own Web Site**
- **Film School in a Box**
- **How to Integrate Macs and PCs in a Single Business Environment**
- **A Beginner's Guide to the Internet**
- **Enterprise Security**
- **Remote LAN Access: Strategies and Solutions**
- **Mega-Design Dynamos!**
- **Creative Layout Techniques**
- **Create Your Own Web Page**
- **Photoshop: Channels and Layers**
- **Building a Mac-Based Intranet**
- **Intermediate Internet: Searching the Web**
- **Zen and the Art of Integrating Your School's Mac Network**

Open to conference attendees only. Limited seating available. Two tutorials per person.

For a complete exhibitor list and more information call 800-645-EXPO

DYNAMIC KEYNOTES

Maximize your learning experience at MACWORLD Expo/Boston with three outstanding keynote sessions on Wednesday, August 6:

Apple will share its latest updates and insights... Guy Kawasaki will showcase the hottest and (coolest) new products... and a panel of Macintosh insiders will dig and delve for everything you'll need to know about Macintosh clones!

Keynotes: Wednesday, August 6, 9:00 a.m – 12:30 p.m.
The Castle at the Boston Park Plaza Hotel, Columbus Ave., Boston

Keynotes are open to conference attendees only, have limited seating and are on a first-come, first-served basis.

SPECIAL FEATURES

- **The Net Zone...** a high-profile showcase for Internet hardware and software. *Sponsored by* boston.com
- **Business Solutions Pavilion...** fosters the burgeoning market for Mac business applications.
- **Developer Greenhouse...** the hottest products from over 25 innovative developers.
- **Education Pavilion...** featuring software, Internet tools and multimedia for schools and home learning.

Special Interests

- **Developer Central...** where software developers creating the next wave of Mac applications can find the tools and solutions they need. Seminars taught by the world's most advanced Mac techies add value to the product selection.
- **UGWUMP...** User Group Welcoming/Unwinding/Meeting Place is the "people connection" for Mac users. Come here to meet, relax, trade ideas and learn about joining or starting a user group and more!

or see http://www.mha.com/macworldexpo/

WHERE TO STAY

Attending MADE EASY

Hotel	Single/Double
Back Bay Hilton 40 Dalton St., Boston, MA 02115	$171/191
Boston Marriott Long Wharf 296 State St., Boston, MA 02109	$251/272
Boston Park Plaza Hotel 64 Arlington St., Boston, MA 02116	$160/180
The Charles Hotel at Harvard Square One Bennett St., Cambridge, MA 02138	$275/275
Colonnade Hotel 120 Huntington Ave., Boston, MA 02116	$195/220
The Copley Plaza 138 St. James Ave., Boston, MA 02116	$206/227
Doubletree Guest Suites 400 Soldiers Field Road, Boston, MA 02134	$189/189
Four Seasons Hotel, Boston 200 Boylston St., Boston, MA 02116	$295/325
Harborside Hyatt Conference Ctr. & Hotel 101 Harborside Dr., Boston, MA 02128	$185/210
Holiday Inn Government Center 5 Blossom St., Boston, MA 02114	$169/189
Hyatt Regency Cambridge 575 Memorial Dr., Cambridge, MA 02139	$170/190
Le Meridien 250 Franklin St., Boston, MA 02110	$244/260
The Lenox Hotel 710 Boylston St., Boston, MA 02116	$173/193
Logan Airport Ramada 75 Service Rd., E. Boston, MA 02128	$139/159
Omni Parker House 60 School St., Boston, MA 02108	$170/190
Radisson Hotel Boston 200 Stuart St., Boston, MA 02116	$170/180
The Regal Bostonian Faneuil Hall Marketplace, Boston, MA 02109	$285/285
Ritz-Carlton Hotel 15 Arlington St., Boston, MA 02117	$260/295
Royal Sonesta Hotel 5 Cambridge Pkwy., Cambridge, MA 02142	$185/185
Sheraton Boston Hotel & Towers 39 Dalton St., Boston, MA 02199	$174/190
Swissôtel One Ave. de Lafayette, Boston, MA 02111	$180/190
The Westin Hotel Copley Place, Boston 10 Huntington Ave., Boston, MA 02116	$199/219

For more information call 800-645-EXPO or access the Web at: http://www.mha.com/macworldexpo/

Macworld EXPO

MACWORLD Expo/Boston
World Trade Center &
Bayside Expo Center

Conference Hours
August 5: 8:30 a.m. – 4:30 p.m. (Tutorials)
August 6: 9:00 a.m. – 5:15 p.m.
August 7: 11:30 a.m. – 5:15 p.m.
August 8: 11:30 a.m. – 2:15 p.m.

Keynotes (Conference attendees only)
The Castle at the Boston Park Plaza
Columbus Avenue, Boston
August 6: 9:00 a.m. – 12:30 p.m.

Exhibit Hours
August 6-7: 10:00 a.m. – 6:00 p.m.
August 8: 10:00 a.m. – 4:00 p.m.

On-site Registration Hours
August 5: 7:00 a.m. – 3:00 p.m.
August 6-7: 8:00 a.m. – 6:00 p.m.
August 8: 8:00 a.m. – 4:00 p.m.

Event Travel Services (ETS) is the official travel agency for MACWORLD Expo. Simply call 800-361-8191, (617) 361-8111 outside the U.S., 9:00 a.m. – 7:00 p.m. EST or fax ETS at 617-361-6936 to make all your travel and accommodation reservations.

ETS EVENT TRAVEL SERVICES

Save up to $1,385 on roundtrip fares to Boston! ETS has obtained super low midweek fares on American Airlines, USAir, Delta Airlines and United Airlines to Boston especially for MACWORLD Expo. Call now and save! These special rates are only available by contacting Event Travel Services, the official travel agency for MACWORLD Expo. ETS is ready to help with all your travel plans for this exciting event.

Hotel availability is limited and on a first-come, first-served basis. A credit card is required to make any hotel, air or car reservation. Additionally, a non-refundable hotel deposit of one night plus 9.7% Massachusetts state and local taxes will be billed to your credit card at time of booking. Air tickets are to be paid in full at time of booking.

Cancellation Policy: Airline/Hotel/Car Rental
All changes or cancellations must be made through Event Travel Services. Airline, hotel and car rental policies vary by company. You will be advised of policies and penalties at time of booking. Rates and availability are subject to change without notice.

Responsibility and Liability: Event Travel Services, travel program producer, and MHA Event Management, travel program sponsor, and/or their agents act only in the capacity of agents for customers in all matters pertaining to hotel accommodations and transportation whether railroad, motor car, airplane or any other means, and as such are not responsible for any damage, expense or inconvenience caused by late train or plane arrivals or departures, or by any change in schedule or condition from any loss, injury or damage to any person or property from any cause whatsoever. Baggage handling throughout the program is entirely at the owner's risk. The customer agrees that MHA Event Management/Event Travel Services shall not be held responsible in the event of any errors or omissions in any promotional material.

U.S. Attendees:
Badges will be mailed after July 21.

International Attendees:
International Badges (including Canada) will be held on-site at either of the Pre-Registered Attendee Counters: in the West Lobby of the Bayside Expo Center or in the Registration Area, upper level of the World Trade Center.

Services for the Physically Challenged
We're committed to ensuring that our physically challenged attendees receive all the services they need to make their visit productive. Call us at 800-945-3313 for more details on the services we offer.

Half-Day Tutorial Codes: (Tuesday, August 5, limit two per person)

CODE **8:30 a.m. - 11:30 a.m.**

T1. Designing Web Graphics
T2. How to Set Up Your Web Site
T3. Film School in a Box
T4. How to Integrate Macs and PCs in a Single Business Environment
T5. A Beginner's Guide to the Internet
T6. Enterprise Security
T7. Creative Layout Techniques

CODE **1:30 p.m. - 4:30 p.m.**

T11. Mega-Design Dynamos!
T12. Create Your Own Web Page
T13. Photoshop: Channels & Layers
T14. Building a Mac-based Intranet
T15. Intermediate Internet: Searching the Web
T16. Zen and the Art of Integrating Your School's Mac Network
T17. Remote LAN Access: Strategies and Solutions

MACWORLD EXPO/BOSTON REGISTRATION FORM

MACWORLD Expo/Boston • August 5-8, 1997 • Bayside Expo Center & World Trade Center

1. REGISTRATION SELECTION AND FEES

Please choose your package and fill out the form completely. Incomplete forms will be returned. Please use one form per person; make photocopies for additional people.

❑ **Package One $170**

Half-day Tutorials, Conference Sessions, Exhibits and Keynote Sessions. Pre-Register by July 7 ($195 at the door).

All Tutorial, Conference and Keynote sessions have limited seating and are on a space-available basis.

Please circle the half-day tutorials you plan to attend. One tutorial per time slot please. Refer to tutorial listing on adjacent page.

8:30-11:30: **T1 T2 T3 T4 T5 T6 T7**

1:30-4:30: **T11 T12 T13 T14 T15 T16 T17**

❑ **Package Two $25**

Admission to Exhibits only.

Pre-Register by July 7 ($40 cash only at the door).

PRE-REGISTER BY JULY 7 AND SAVE!

- **Confirmation** of your registration will be sent to you once registration is received. Pre-registration deadline is July 7, 1997.
- **U.S. Badges:** will be mailed after July 21.
- **International Badges:** (including Canada) will be held on-site at either of the Pre-Registered Attendee Counters: in the West Lobby of the Bayside Expo Center or in the Registration Area, upper level of the World Trade Center.
- **Registration Hours:** August 5, 7:00 a.m. - 3:00 p.m.; August 6-7, 8:00 a.m. - 6:00 p.m. and August 8, 8:00 a.m. - 4:00 p.m.

❑ Please check here if you are disabled and require special services. Simply attach a written description of your needs.

Conditions and Policies: Payment must accompany form for registration to be complete. Purchase orders not accepted. Registration forms received after July 7 will be returned unprocessed. After this date you must register on-site. This form cannot be used for on-site registration. All registration fees are non-refundable and credentials are non-transferable. A $20 fee will be charged for all returned checks.

2. CUSTOMER INFORMATION

First Name M.I. Last Name

Title

Company

Street Address (please include apt. #, suite, mail stop, etc.)

P.O. Box (if applicable)

City State/Province Zip Code/Postal Code

Country Telephone Extension

Fax Internet/Email Address

MWA

3. ATTENDEE PROFILE

MUST BE FILLED OUT TO PROCESS YOUR BADGE.

WHAT IS YOUR INDUSTRY? (Check One Only)
- ❑ 1. Accounting/Finance
- ❑ 2. Aerospace
- ❑ 3. Architecture/Construction/Process Industries
- ❑ 4. Art/Design/Creative Services
- ❑ 5. Arts & Entertainment
- ❑ 6. Computer Reseller/VAR/VAD/Service
- ❑ 7. Consulting
- ❑ 8. Education
- ❑ 9. Engineering/R&D
- ❑ 10 Government/Military
- ❑ 11. Health/Medical Services
- ❑ 12. Legal Services
- ❑ 13. Manufacturing (Computer Industry)
- ❑ 14. Manufacturing (Non-Computer Industry)
- ❑ 15. Marketing/Sales/PR/Communications
- ❑ 16. Printing/Publishing
- ❑ 17. Transportation
- ❑ 18. Utilities
- ❑ 19. Other_____

WHAT IS YOUR JOB FUNCTION? (Check One Only)
- ❑ 20. Art Director/Graphics
- ❑ 21. Consultant
- ❑ 22. Controller/Treasurer/Accounting/CFO
- ❑ 23. Corporate Executive
- ❑ 24. DP/IS Management/CIO
- ❑ 25. Editorial/Writing
- ❑ 26. Educator
- ❑ 27. Engineering/Scientific/R&D
- ❑ 28. Human Resources
- ❑ 29. Management/Department Head
- ❑ 30. Marketing/Sales
- ❑ 31. Network Management
- ❑ 32. Professional (Lawyer, Doctor, etc.)
- ❑ 33. Programming/Analysis
- ❑ 34 Purchasing
- ❑ 35. Software Developer
- ❑ 36. Training
- ❑ 37. Other_____

WHAT IS THE SIZE OF YOUR ORGANIZATION?
- ❑ 38. Under 50
- ❑ 39. 50-99
- ❑ 40. 100-499
- ❑ 41. 500-999
- ❑ 42. 1000 & Over

WHICH PERSONAL COMPUTERS DO YOU USE? (Check all that apply)
- ❑ 43. Macintosh Powerbook Series/Duo Series
- ❑ 44. Macintosh II Series
- ❑ 45. Macintosh Performa Series
- ❑ 46. Macintosh Centris Series
- ❑ 47. Macintosh Quadra Series
- ❑ 48. Macintosh Workgroup Series
- ❑ 49. PowerMac
- ❑ 50. Newton
- ❑ 51. Mac clone
- ❑ 52. IBM PC or compatible desktop
- ❑ 53. IBM Laptop/Notebook
- ❑ 54. Other_____

HOW MANY MACINTOSH COMPUTERS ARE USED IN YOUR ORGANIZATION?
- ❑ 55. 0
- ❑ 56. 1-10
- ❑ 57. 11-25
- ❑ 58 26-50
- ❑ 59 51-100
- ❑ 60. 101-500
- ❑ 61. 501+

ARE THE COMPUTERS AT YOUR ORGANIZATION NETWORKED?
- ❑ 62 Yes
- ❑ 63. No

WHICH APPLICATIONS DO YOU OR YOUR ORGANIZATION UTILIZE? (Check all that apply)
- ❑ 64 Accounting/Finance
- ❑ 65. Agenda Minder/Scheduler
- ❑ 66. CAD/CAM
- ❑ 67. CASE Tools
- ❑ 68. Database
- ❑ 69. Desktop Publishing
- ❑ 70. Digital Video
- ❑ 71. Education
- ❑ 72. Graphics
- ❑ 73. Multimedia
- ❑ 74. Project Management
- ❑ 75. Speadsheet
- ❑ 76. Word Processing

WHICH (IF ANY) OF THESE SERVICES DOES YOUR ORGANIZATION UTILIZE? (Check all that apply)
- ❑ 77. America On-line
- ❑ 78. AT&T
- ❑ 79. CompuServe
- ❑ 80. Netscape
- ❑ 81. Prodigy
- ❑ 82 Other_____

4. PAYMENT METHOD

❑ Check enclosed (make payable to MACWORLD Expo). Enclose check and form in an envelope.

❑ Master Card ❑ Visa ❑ American Express Amount $_____

Account Number Expiration Date

If card holder is other than registrant, please print card holder's name below:

First Name M.I.

Last Name Card Holder Signature

Payment must accompany form for registration to be complete.

Important: Don't pay twice for this event! You will be charged for all registrations received, and not refunded for duplicate registrations. Please do not fax this form in more than once and if you fax, please do not mail in as well.

REGISTER NOW!

Use either ONE of the following methods to register with this form:

U.S. MAIL

Mail to: MACWORLD Expo/Boston
P.O. Box 9103, Norwood, MA 02062-9103.

OR

FAX

Fax to: 617.440.0359.
Faxed registration forms must include credit card information.

WWW

Visit the MACWORLD Expo Web site at http://www.mha.com/macworldexpo/
For more information, call: 800.645.EXPO or 617.551.9800 outside of the U.S.

(TTY) Service is available for the hearing impaired. Dial 617.440.0366.

Only A Fool Tries To Solve Problems With Handguns...Large Caliber Automatics Do The Job Much More Quickly!

"Absolutely the best first-person game of the year, bar none...Duke Nukem is the undisputed king."
Boot Magazine

"Gives players something they can't get elsewhere: A hero with an attitude."
Wall Street Journal

"★★★★★" (5 out of 5 stars)
PC Games

"★★★★" (4 out of 4 stars)
Computer Life

"Duke is king."
Computer Gaming World

"A perfect 10!"
Computer Player

#1 Selling PC Game of 1996

Available in June for Macintosh

ATOMIC EDITION

DUKE NUKEM 3D™

for Macintosh®

Available at

COMPUSA
THE COMPUTER SUPERSTORE®
1·800·COMPUSA
1·800·266·7872

Created by 3D Realms

Mac version by Lion Entertainment, Inc.

MacSoft®

2300 Berkshire Lane No., Plymouth, MN 55441 • 612-509-7600
Call for a free catalog or visit our website at www.wizworks.com

System Requirements: Any Macintosh with a 68040 or higher microprocessor, 8MB RAM, color monitor and CD-ROM drive. Also accelerated for Power Macintosh.

Circle 30 on reader service card

Secrets

System Software Snip and Clip

YOUR GUIDE TO A SLIMMER, TRIMMER SYSTEM FOLDER

by Joseph Schorr

Twelve years ago, *Macworld* ran an article explaining how you could trim down your System Folder to save memory and disk space. "For the time being," we lamented, "making the Mac an efficient computing tool means eliminating portions of the system that add convenience and appeal."

If that was true back then (when a fully loaded System Folder weighed in at just 200K), it's even truer in today's world of 100MB operating systems that gobble up 8 or more megs of RAM the moment you start up. The Mac's latest multimedia and Internet features may be thrilling, but they exact an increasingly steep price in terms of memory, speed, and storage. And while many of the new Mac models come with 32MB of RAM and 1GB or 2GB hard drives, there are still plenty of us trying to survive with limited disk space and 16MB of RAM—or less.

Which brings us to a survival secret that bears repeating: turn off—or even throw away—the system extensions you don't need. And there are plenty of them. Not only will you end up reducing clutter and confusion in your System Folder, but you'll be freeing up as much additional RAM as possible and reducing the potential for extension conflicts.

The real trick, of course, is figuring out *which* system components are absolute essentials and which can be ditched without any problem. The Apple Token Ring NB extension, for example, *sounds* dispensable, but can you safely toss it out? (Yes, as long as you're not on a Token Ring network.) On the other hand, the Finder Scripting Extension sounds like something only a programmer might need, but without it your Mac's Find File command goes berserk.

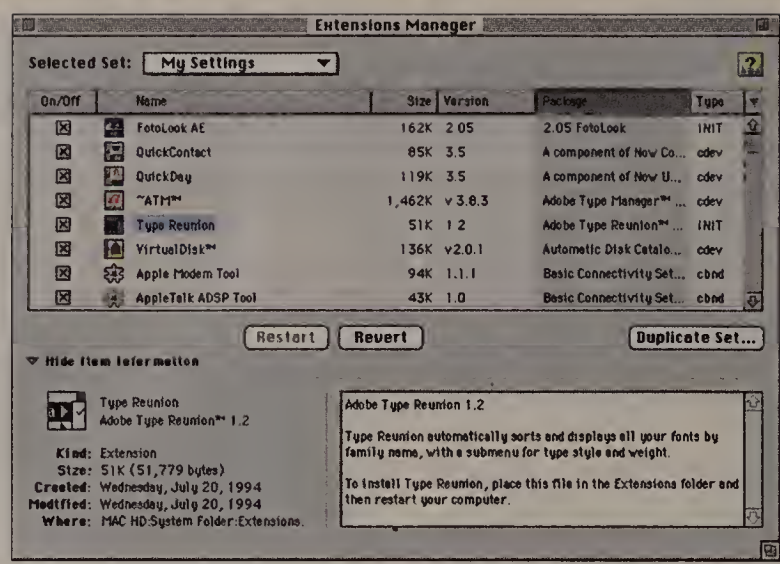
Here, then, is an updated guide to what you can get rid of and what you can't live without. Go sifting through your System Folder with this list in hand, and you'll find some unexpected ways to trim system fat.

To Trash or Not to Trash

Don't be fooled by important-sounding names; many extensions bear titles that make them sound essential, but they may be totally unnecessary on your particular system. Do you control your Mac by voice command, using Apple's PlainTalk technology? If the answer is no, then get rid of the InlineFilter extension; it's used only in connection with voice recognition. Ever connect your PowerBook to your Mac using an infrared link? If not, you don't need the IRTalk extension,

continues

Package Deal Apple's improved Extensions Manager (which shipped with Mac OS 7.6) lets you list control panels and extensions by package, showing the name of the particular software package that installed each file—a terrific aid when you're trying to track down the origins of a mysterious file.



which does nothing except handle infrared linking. Never use Apple Remote Access? Then you can get rid of all the files in the Extensions and Control Panels folders that start with the word *Remote*, as well as Apple Remote Access Client, Apple Remote Access Personal, and the Serial Port Arbitrator.

And then there are those extensions that system updates made obsolete but that somehow got left behind. The Apple Multimedia Tuner, for example, used to be essential but was rolled into QuickTime 2.1. If you've got QuickTime 2.1 or later, get the Apple Multimedia Tuner out of there for good.

But before you get too Trash-happy, beware: some file names can be deceiving. For example, it's obvious that you need the Audio CD Access extension to play audio CDs on your Mac—but did you know that Foreign File Access is also essential? Without it, your Mac won't even mount an audio CD. On the other hand, the Graphics Accelerator extension sounds like a vital component you should never turn off, yet it's useless unless your Mac is equipped with the Apple Accelerated Graphics Card—a card used exclusively in the Power Mac 9500. **m**

Contributing editor JOSEPH SCHORR is coauthor of *Macworld Mac Secrets*, fourth edition (IDG Books Worldwide, 1997), which covers all 11,846 control panels, extensions, and enablers found in the current Mac OS.

Sets and Sensibility

I'm certainly not suggesting that you trash *all* of the 50 or so files mentioned in this column; you're bound to need some of them. But once you've determined which extensions perform which tasks, you can build customized start-up sets using Apple's Extensions Manager 4.0 so that only the software you need gets loaded at start-up (see *Secrets*, September 1996). This may seem like a lot of trouble, but it's worth it when you're trying to coax every last bit of power out of an aging system. For example, when I edit QuickTime movies, I need all the RAM and CPU speed I can get, so I created a start-up set that temporarily eliminates Desktop Printing, Open Transport, most of the Mac's Speech features, and all nine extensions associated with Microsoft Office. The result: nearly 1.5MB of additional free RAM.

MS Office If you're not running any of the Microsoft Office applications—Word, Excel, or PowerPoint—you can safely turn off all nine extensions that Office shamelessly stuffs into the System Folder:

Microsoft Dialog Library
Microsoft Find File Library
Microsoft Mail Library
Microsoft OLE Automation
Microsoft OLE Library
Microsoft OLE Extension
Microsoft Tool Editor Library
Microsoft Office Manager
Visual Basic for Applications

Speech Having your Mac read dialog boxes to you aloud in the Zarvox voice is cute, but hardly essential. To disable those speech capabilities, you turn off no less than five extensions and control panels:

MacinTalk 2 or
MacinTalk 3
MacinTalk Pro
Speech Manager
Speech Recognition
Speech

Desktop Printing Desktop Printing adds four extensions and a Control Strip module to your System Folder. If you're willing to print the old-fashioned way, you can live without all of these:

Desktop Printer Extension
Desktop Printer Spooler
Desktop Printer Menu
Desktop PrintMonitor
Printer Selector

Networking Then there's networking. If you don't require Internet access during a work session and don't have your Mac connected to a network (or to a networked printer), you can say good-bye to all 16 Open Transport extensions and control panels:

AppleTalk
Open Tpt AppleTalk Library
Open Tpt ATalk 68K Library
Open Tpt Inet 68K Library
Open Tpt Internet Library
Open Transport 68K Library
Open Transport Library
OpenTptAppleTalkLib
OpenTptInternetLib
OpenTransportLib
OpenTpt Modem
OpenTpt Remote Access
OpenTpt Modem 68K
OpenTpt Remote Access 68K
OpenTpt Serial Port Arbitrator
TCP/IP

QuickDraw 3D OK, honestly, how often do you use QuickDraw 3D in a typical workday? You can turn off these five files until you need them:

Apple QD3D HW Plug-In
QuickDraw 3D
QuickDraw 3D IR
QuickDraw 3D RAVE
QuickDraw 3D Viewer

CD-ROMs Operating a CD-ROM drive on a Mac takes six different extensions. But if you don't have a drive or don't need CD access during a work session, you can turn them all off:

Apple CD-ROM
Apple Photo Access
Audio CD Access
Foreign File Access
High Sierra File Access
ISO 9660 File Access

Quick Tips

Tips, Tricks, and Shortcuts

by Lon Poole

America Online 3.0 users, is your Favorite Places window always hiding behind a few dozen others? Or maybe you just hate to open it up every session? Andy Rogers of Bay City, Michigan, has a simple way to make AOL navigation even more convenient. Save a Favorite Places site by clicking the heart in the upper-right corner of the AOL window. Next, open your Favorite Places window (choose Favorite Places from AOL's Go To menu), and look for the icon of the site you just added. Drag the icon to a Finder window, folder icon, or disk icon on the desktop to create a small file. If you double-click that file, you will go to the site just as if you had clicked it in AOL's Favorite Places window.

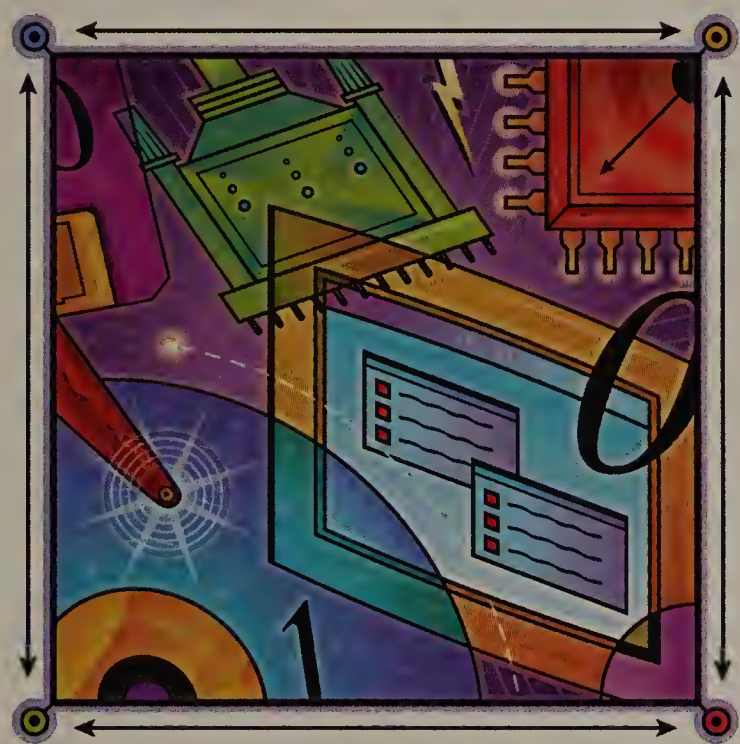
With a bunch of these files you can add a list of favorite places to your Apple menu, where it's always available. Make sure the Submenus option is turned on in the Apple Menu Options control panel, and create a folder named AOL Favorite Places in your Apple Menu Items folder. Put all your favorite-places files or aliases of them in that folder. You can create subcategories of favorite places by creating folders within your AOL Favorite Places folder; place each favorite-place file or its alias in the appropriate subfolder. Instantly you have a hierarchical list of favorite places available all the time.

Spotting Empty Folders

Q. When I organize stuff in the Finder, I distribute items among folders named by category (letters of the alphabet, for instance). Later, when I'm archiving those folders, I'd like to know which ones remained empty, but I don't want to open each folder individually. Is there an extension that makes empty folders a particular color or in some other way indicates empty folders? Alternatively, is there a single command that opens all folders in a window at once (in, say, Name view)?

MICHAEL COONEY
Friendship, Maine

A. You can use keyboard commands to see the contents of multiple folders in a window that's set to an outline view, such as by name. Select the folders (press ⌘-A to select all) and press ⌘–right arrow to expand the selected folders and see their contents. To also expand all folders contained in the selected folders, press ⌘-option–right arrow. Pressing ⌘–left arrow collapses all selected folders, and pressing ⌘-option–left arrow collapses all selected folders and all folders in them.



You can also force empty folders to the bottom of a window. Just turn on the Calculate Folder Sizes option in the Views control panel and view the window by size. Keep in mind that calculating folder sizes slows the Finder, especially if you keep windows open from file servers or shared folders.

Free MPEG

Q. How can I view an MPEG movie on my Performa 6200? I would like to do this with a free software solution as opposed to an expensive video card.

PETER WHEDBEE
Baltimore, Maryland

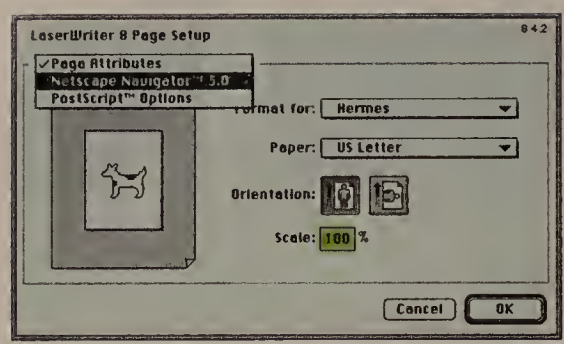
A. Apple's free QuickTime MPEG extension enables software-only playback of full-screen MPEG-1 and VideoCD files on Power Macs with QuickTime 2.5 installed. You can view MPEG movies with the included MoviePlayer application or another QuickTime-enabled application. You can also view MPEG movies in a Web browser with version 1.1 or later of Apple's QuickTime plug-in. All this software is available from Macworld Online (*http://www.macworld.com*) and America Online (keyword *Macworld*).

Easy Booklets

Q. Do you know of any shareware utility that converts a word processing document (ClarisWorks or Corel WordPerfect) to a staple-in-the-middle booklet form? I am trying to print a script for a local production, and the usual letter-size page would be rather unwieldy on stage.

SHANE LIESEGANG
Jacksonville, Florida

continues



Personal Defaults If the topmost pop-up menu for LaserWriter 8.4.X's Page Setup lists the current application, you can save the current Page Setup settings as the default settings for that application by option-clicking the OK button. If the pop-up doesn't list an application name, you can save the current settings as generic defaults by option-clicking OK.

A. Use ClickBook from the ForeFront Group ($49.95; 713/961-1101, *http://www.clickbook.com*). After turning on ClickBook with the Page Setup command (or globally with the ClickBook control panel), you simply print as you usually would. ClickBook intercepts the page images on their way to the ink-jet or laser printer and reformats them to the layout of your choice. The product includes layouts for several types of folded booklets and cut-sheet booklets on letter or legal-size paper, double-sided pages in portrait or landscape orientation, address books, thumbnails, and trifold brochures, or make your own layouts. You can preview your document in any layout before printing, and you can combine multiple documents from the same application or different applications into one booklet. The company also sells a long-reach stapler for binding your folded booklets.

LaserWriter Page Setup Defaults

Q. The LaserWriter 8.4.1 driver's default paper size is US Letter Small. I want the driver to default to US Letter instead, but I can't make the driver remember my change.

IZZY VASQUEZ
Albany, California

A. After making your changes to the Page Setup settings for LaserWriter 8.4.X, press the option key while clicking OK. An alert asks you to confirm whether you want to save the current Page Setup settings as the default. You have to perform this exercise separately in each application that has its own Page Setup settings. To see if a particular application has its own Page Setup settings, look for the application's name in the pop-up menu at the top left of the Page Setup dialog box (see "Personal Defaults"). If that pop-up menu doesn't list the current application's name, the application uses the generic Page Setup default settings. Changing the generic Page Setup defaults in one application affects all applications that use them (but doesn't affect applications with their own Page Setup settings).

Rename Open Word Files

TIP *Macworld*'s review of Nisus Writer 5.0.1 (*Reviews*, April 1997) asks, "What other program lets you rename an open document without closing it . . . ?" Actually, you can easily rename an open document in Microsoft Word 6. Simply find the document's icon in the Finder, select its name, and make your changes. When you return to Word 6, the document has its new name displayed in the title bar.

STEPHEN TANNENBAUM
Thornhill, Ontario, Canada

Audio CD Autoplay

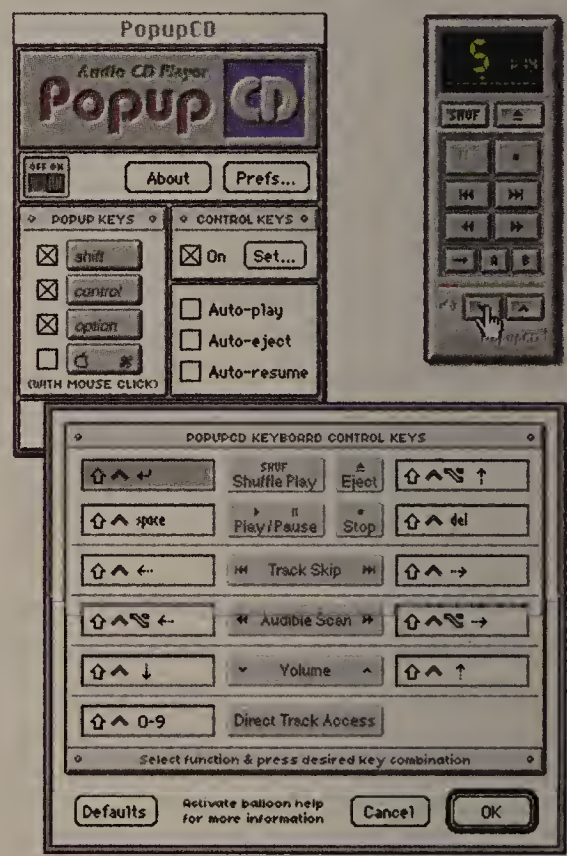
TIP I like to play audio CDs on my Mac. Putting an alias of Track 1 from any audio CD into the Startup Items folder has the Finder automatically launch AppleCD Audio Player during start-up and begin playing whatever CD is in the drive. The Track 1 alias works with any audio CD, not just the one used to make the alias. If there's no CD in the drive, the Mac requests one.

SCOTT WOOLEDGE
Brooklyn, New York

If you have QuickTime 2.5, you can have the Mac automatically play an audio CD not only during start-up but any time you insert one. Turn on the Enable Audio CD AutoPlay option in the AutoPlay section of the QuickTime Settings control panel. This feature starts playing the CD earlier during start-up than the Start-up Items method and doesn't require the AppleCD Audio Player application. You have to open that application or its equivalent if you want to control playback of an autoplaying CD while it's playing. For an alternative to the AppleCD Audio Player, see "Audio-CD Control."

To hear an audio CD on some Macs, particularly when playing from an external CD drive, you must click the Options button in the Sound In section of the Sound control panel, then select an input source and turn on the Playthrough option. Your Mac may handle Playthrough automatically; you'll have to experiment to see. On Macs that normally use the Monitors & Sound control panel, such as Macs with PCI slots, the Sound control panel is in the Apple Extras folder, not the Control Panels folder. You cannot set the Playthrough option with the Monitors & Sound control panel.

To hear audio from an external CD player through the Mac's low-fi internal speaker or through external powered speakers connected to the Mac's sound-out port, you must run a stereo patch cord from the external CD drive's sound-out jacks to the Mac's sound-in port (or to the audio-input jacks if your Mac has them). With some Mac models and versions of the Mac OS you must also move the External CD Sound file from the Apple Extras folder to the Extensions folder. The only Macs that Apple has said require that extension are the 630 series and the Power Mac and Performa 5200 and 6200 series. If your Apple Extras folder doesn't contain the External CD Sound extension, you probably don't need it. Apple doesn't distribute the extension through its online software updates library or on system software CDs.—L.P.



Audio-CD Control Want to control audio-CD playback with keystrokes or a pop-up remote control from any application? Paul Birdsong of Herman, Nebraska, recommends the $15 PopupCD shareware by John Brochu. It can also record audio clips directly from CD to hard drive. Shown here: the PopupCD control panel with its keystroke-configuration dialog box, and the pop-up remote control.

Pick Out TrueType Fonts

TIP Adobe Type Manager 4.0's antialiasing feature may seem purely cosmetic, but if you're in the prepress industry it can perform a valuable function. Because ATM 4.0 does not antialias TrueType fonts, they become incredibly easy to spot within open documents. If you need to avoid sending TrueType fonts to your output device, this unintended (in my opinion) feature proves quite useful.

CHRIS WOODFIELD
Baltimore, Maryland

PageMaker Zoom Toggle

TIP In *Macworld*'s April *Publishing Workshop*, Olav Martin Kvern wrote a fine article on tips and tricks with Adobe PageMaker 6.0 and 6.5—the sort of stuff that makes your publication invaluable to normal schmoes such as myself. The article explains how to change the accursed ⌘-0 (zero, for Fit In Window) to ⌘-W with ResEdit, but doesn't mention the zoom toggle. It gives you quick access to the three zoom levels you need most—Fit In Window, 100 percent, and 200 percent.

In Fit In Window view, ⌘-option-click with any tool, and boom, 100 percent! Do it again to go back to Fit In Window view. Include the shift key to toggle between 100 percent and 200 percent.

AARON VEGH
Hamilton, Ontario, Canada

Mounting Novell NetWare Volumes

TIP I use my Macintosh on a Novell NetWare 4.1 network. Because of Novell's security implementation with NetWare 4.X, you can no longer specify that NetWare volumes automatically mount at start-up. It is time-consuming to log in to Novell Directory Services and use the Chooser to mount volumes on multiple servers. To save time, I put aliases of all the NetWare volumes in my Startup Items folder. After I authenticate a connection to the first volume (by simply typing in my user name and password), all the other volumes are mounted even if they're on different servers.

SETH T. HILL
Columbus, Ohio

Bugs and Turkeys

Brian Landwehr of West Des Moines, Iowa, found that Adobe Photoshop 4.0 won't allow users to scale layers or sections properly using the Free Transform function. The results: pixelated, jagged-edged images. To avoid this problem temporarily, Adobe Systems (415/961-4400, *http://www.adobe.com*) recommends using the Image Size command to drag the desired layer to a new document, reduce the size, then drag it back to the original document. The company is currently working on a Free Transform fix and will post it on its Web site.—ALLYSON BATES

Macworld will send you a Bug Report or Turkey Shoot T-shirt if you are the first to inform us of a turkey or a serious, reproducible bug that we report in this column. See How to Contact Macworld.

Improved Browser Script

TIP Your AppleScript application that mounts a ShrinkWrap RAM disk containing a Web browser's cache just before opening the browser is a great idea (*Quick Tips*, April 1997). A problem occurs, however, if you quit the browser but forget to put away the RAM disk, and later you double-click the AppleScript application to use the browser again. If the RAM disk is already mounted when the script runs, an error message states that the file is already open, and the browser does not open. There are workarounds, but you don't want to confuse novices.

Adding an "if" statement to the script solves the problem:

```
tell application "Finder"
  if not (exists disk "Browser Cache") then
    tell application "ShrinkWrap™"
      activate
      set RAM Disk of preferences to true
      mount alias "Macintosh HD:Browser
        Cache image" with unlocked
      quit
    end tell
  end if
end tell
activate application "Netscape Navigator™ 3.0"
```

In this script, replace "Browser Cache" with the actual name of your RAM disk, and replace "Macintosh HD:Browser Cache image" with the path to your ShrinkWrap disk image file. Also, put the exact name of your browser in the last statement.

THOMAS L. AINSCOUGH
North Dartmouth, Massachusetts

The script requires Aladdin Systems' ShrinkWrap 2.0 or later. Earlier versions do not allow setting ShrinkWrap preferences with AppleScript commands.—L.P.

Quick Bits

• When using a crossover cable to connect two Macs equipped with 10BaseT (RJ-45) Ethernet jacks without a hub (as described in April's *Quick Tips*), you must start up both computers before changing the connection to Ethernet in the AppleTalk control panel. After you've successfully set the AppleTalk connection to Ethernet, a similar error occurs if you subsequently start up one computer while the other is off. An alert explains, "An error occurred while trying to start up your AppleTalk connection. The built-in LocalTalk port will be used instead." If that happens, you have to reset the AppleTalk connection to Ethernet after starting up the other computer.

• Following are updates to the list of DOS and Windows file-name extensions in April *Quick Tips*, from Jim Ambrose of Ripon, California; Stephen K. Suh of Ottawa, Ontario, Canada; and original contributor John Impallomeni of Albuquerque, New Mexico:

.AI is for Adobe Illustrator 4.1

.P65 is for Adobe PageMaker 6.5 publication files

.T65 is for Adobe PageMaker 6.5 template files

.qxd is for QuarkXPress documents **m**

LON POOLE answers readers' questions and selects reader-submitted tips for this monthly column. His latest book is *Macworld Mac OS 7.6 Bible*, fourth edition (IDG Books Worldwide, 1997).

Shareware mentioned in *Quick Tips* is available from Macworld Online (*http://www.macworld.com*) or America Online (keyword *Macworld*).

We pay from $25 to $100 for tips on how to use Macs, peripherals, or software. Send questions or tips to *quicktips@macworld.com* or Macworld Quick Tips, 501 Second St., San Francisco, CA 94107. All published submissions become the sole property of *Macworld*. Due to the high volume of mail received, we can't provide personal responses.

A FLIGHT *of* FANCY.

ADOBE
PHOTOSHOP 4.0

Let your imagination soar. Because the newest version of Adobe Photoshop has the wings to take you anywhere. Now, the world's leading photo design and production tool has evolved. Version 4.0 adds a host of new capabilities to send your productivity and creativity skyward. So whether you are designing compelling visuals for print, laying out a sexy interactive interface for your latest multimedia creation, or processing scores of images to fuel your Web page, Photoshop 4.0 is the indispensable tool that's ready to lift your visions to new heights. Call 1-800-492-3623, offer code 26104 or visit our web site at www.adobe.com.

CALL NOW FOR YOUR
UPGRADE
TO THE NEW ADOBE PHOTOSHOP 4.0 FOR MACINTOSH® AND WINDOWS®

Actions boost your productivity by letting you automate critical imaging tasks and then apply them to a folder full of images.

With support for all the key **Web file formats**, it's no wonder that Adobe Photoshop is the number one tool for Web image processing.

Grids and Guides bring precision layout capabilities to even the most complex compositing projects.

Free Transform allows virtually unlimited experimentation while retaining image quality.

Adjustment Layers give you unlimited flexibility for color and tonal corrections.

Adobe

If you can *dream* it, you can *do* it.®

Adobe, Adobe Photoshop and the tagline, "If you can dream it, you can do it" are trademarks of Adobe Systems Incorporated. Macintosh is a registered trademark of Apple Computer, Inc. Windows is a registered trademark of Microsoft in the U.S. and other countries. All other marks are the property of their respective companies. ©1997 Adobe Systems Incorporated. All rights reserved.

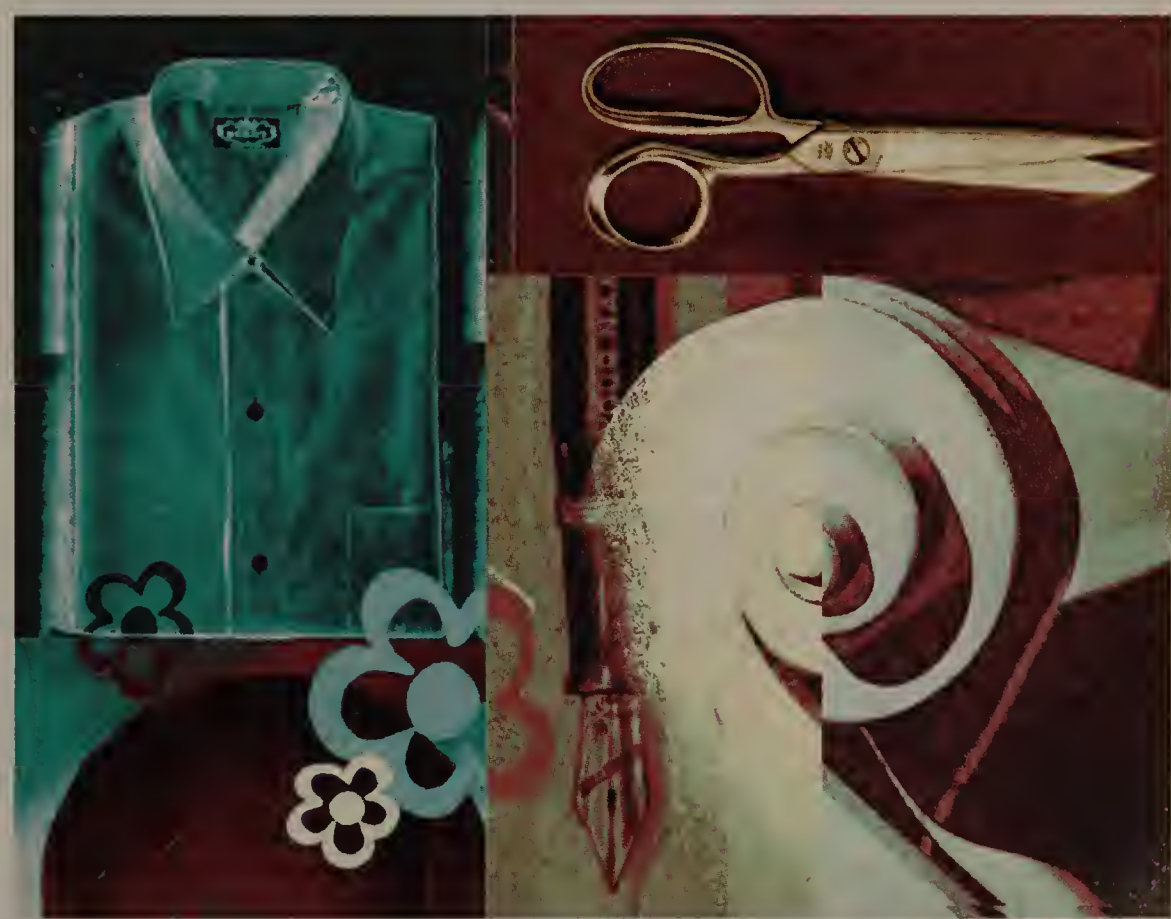
Circle 253 on reader service card

Media

Working with Clip Media

CHOOSING, USING, AND CUSTOMIZING OFF-THE-RACK MEDIA

by Jim Heid



We'd all like to wear hand-tailored originals, but most of us have to buy off the rack. A similar reality exists with media. We'd all like to commission original graphics and music for our presentations, Web sites, videos, or CD-ROM titles, but the budget doesn't always allow it. (The schedule often has a say, too.)

The good news is that a veritable department store of canned media elements is available. Photographs, backgrounds, buttons, music—you could almost put together a project using nothing *but* clip media. But if you are a smart dresser you'll want to alter your clip media before you wear it. By editing images and tweaking buttons and backgrounds you can take the "clip" out of clip art (and you don't have to stop there; you can alter audio too).

This month, I shine the spotlight on some particularly impressive collections of visual media—photography, animations, background textures, and user-interface elements—and show several ways you might tailor them. Next month, I'll cover stock music and sound effects. For samples and more information, visit *http://www.heidsite.com.*

Pictures Perfect

Tens of thousands of photographs are available from companies such as PhotoDisc (206/441-9355, *http://www.photodisc.com*) and Adobe's Image Club Graphics division (403/262-8008, *http://www.imageclub.com*).

Each offers dozens of CD-ROMs containing images organized into categories: objects, people, nature, medical themes (ouch). PhotoDisc's CD-ROMs range in price from $149 to $299; Image Club Graphics' go for $79.99 to $249.99. PhotoDisc also sells individual images through its exquisite Web site ($29.95 to $49.95). Enter keywords (for example, *sunset* and *beach*) and the Web site shows thumbnail views. One click puts an image in your virtual shopping basket.

Apply Paint or Pen Effects Numerous Adobe Photoshop filter collections enable you to make a photograph look like a charcoal drawing, a pen-and-ink sketch, a Picasso—you name it. Adobe's three-volume Gallery Effects series (included with Photoshop 4.0; 415/961-4400, *http://www.adobe.com*) sports numerous paint and pen effects. Xaos Tools'

continues

Paint Alchemy ($199; 415/538-7000, *http://www.xaostools.com*) is also a superb tool for adding paint-type effects (see "Top 20 Photoshop Plug-Ins," *Macworld*, September 1996).

Add Arty Edge Effects Auto F/X's three-volume Photo/Graphic Edges series ($179 each; 603/569-8800, *http://www.autofx.com*) does a beautiful job of adding creative effects such as film sprockets, paint stipples, and geometric patterns to the edges of images. You can also create your own custom edges in Photoshop 4.0's Quick Mask mode (see "Adding an Arty Edge").

A Cast of Characters

Sometimes you don't need a photograph but a line illustration—a little piece of spot art—to enliven a screen. One option is a pictorial font. Letraset (201/845-6100, *http://www.letraset.com*), International Typeface Corporation (212/949-8072, *http://www.esselte.com/itc/*), and Image Club Graphics are three sources for pictorial fonts that contain dozens of illustrations apiece. Numerous shareware pictorial fonts are also available; you can download some from my Web site. Because pictorial fonts are outline fonts, it's easy to get the right-size illustration: just choose the point size you need.

Create 3-D Art Many programs can render 3-D text; examples include Strata's Strata StudioPro and StrataType 3d (801/628-5218, *http://www.strata3d.com*), MetaTools' Infini-D (formerly from Specular; 805/566-6220, *http://www.metatools.com*), and Xaos Tools' TypeCaster Photoshop plug-in. Use them to turn a font dingbat into a glittering, multidimensional character or even an animation.

Art in Motion

It's a rare Web site that doesn't have an animated GIF image on it somewhere. Recognizing this, PhotoDisc has introduced its Animation Series collection, which currently consists of two CD-ROMs. In the Standard version ($149 each), each animation is provided in three sizes and in both GIF and Macromedia Shockwave formats. In the Pro version ($249 each), the original Macromedia Director project files are also included, and the frames are provided in both 8- and 24-bit color depths. Letraset's $159.95 Web.Stir Art Kit Portfolio Collection, a set of user-interface elements and backgrounds, also includes some animated GIFs.

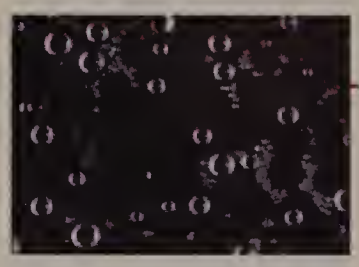
A vast selection of free animated GIFs is also available on the Web. Many of them are worth what they cost, but there are some clever collections, too.

Rather than using someone's animation as is, consider making some tweaks. A great tool for modifying animated GIFs is Totally Hip Software's WebPainter ($99.95; 604/685-6525, *http://www.totallyhip.com*). Unlike the legendary (and free) GifBuilder (*http://iawww.epfl.ch/Staff/Yves.Piguet/clip2gif-home/GifBuilder.html*), WebPainter provides a full array of painting tools. To modify the original Macromedia Director projects included with PhotoDisc's Pro series, you'll need Director.

Change the Timing You might prefer that an animation play back faster or slower than its original pace. You can make timing adjustments in any GIF animator—just specify a new duration for the frame or frames you want to change.

From Good Stock

The elements may be canned, but the result is highly personal. *Macworld* senior design associate Belinda Chlouber used Adobe Photoshop to customize a variety of clip media and combine them into a screen for a hip, hypothetical music project.



Applying the Trace Contour filter to one channel of this image (PhotoDisc Backgrounds and Textures Volume 3) changed the look of the bubbles. The artist also gave the background a new color, adjusted Brightness/contrast, and applied Gaussian Blur.

The guitar image on this button (from Artbeats' WebTools) appealed to the artist. She cropped out the button's edges, then rotated, scaled, and distorted the guitar.

This project called for notes, and the artist found some on a button (from WebTools). She added highlights and cropped the button edges, then scaled, rotated, and distorted the notes.

This button (from WebTools) needed very little change. The artist adjusted its color, then scaled the button to fit the radio image (from PhotoDisc's Object Series).

As users interact with a live project, different button versions provide feedback. This button set (from WebTools) offers several variations.

Change the Soundtracks PhotoDisc's Shockwave animations have sound effects—in one, an animated clock radio plays tunes as you interact with it. You might change those sound effects to your own tunes or voice.

Add Your Own Characters Use an animation as a starting point, not an end result. Another PhotoDisc animation shows a hand pushing down. Try putting text or an image under the hand and distorting it so that it becomes crushed.

Interface Lifts

The common denominator in any interactive production is the window dressing: screen backgrounds, borders, navigation buttons, and other user-interface elements. Several CD-ROM collections offer an assortment of Web interface essentials, and each has unique assets.

Image Club's $99 WebMorsels includes numerous styles of common navigation buttons (What's New, About, Products, Home). Artbeats' (541/863-4429, *http://www.artbeats.com*) $69 WebTools includes buttons in a variety of states (such as up and down) as well as a collection of sound effects. Aridi Computer Graphics' (972/404-9171, *http://www.aridi.com*) $79 WebClips supplements its user-interface elements with a set of attractive ornaments. The company also sells CD-ROM collections containing meticulously drawn background patterns, ornaments, and initial capitals.

Mainstay's (805/484-9400, *http://www.mstay.com*) $139.95 PageCharmer, which should be shipping by the time you read this, lets you build Java applet–based Web user interfaces containing animated multistate buttons.

For CD-ROM, kiosk, or presentation work, there are interface element collections for Director that include canned Lingo scripts. statmedia's (714/280-0038, *http://www.statmedia.com*) $180 Instant Buttons & Controls 3.0 is the best of the bunch and the easiest to use: just drag and drop its animated, sound-effects–enhanced buttons into your Director project. Vicious Fishes Software's (714/280-0038, *http://www.viciousfishes.com*) $49.95 Multimedia Tackle Box is another excellent collection of interface elements.

Change the Images You like a button or texture, but it clashes with your project's color scheme. Use Photoshop's color-correction features to change the hue. Other alteration possibilities include resizing, inverting, and filtering.

Make Your Own Textures and backgrounds are easy to make. Try scanning a piece of linen or burlap, or a sheet of handmade paper that has an interesting grain pattern. Then tweak and modify it in Photoshop. Or use Three D Graphics' (310/553-3313, *http://www.threedgraphics.com*) $129.99 Texture Creator, a Power Mac–only 3-D rendering package that specializes in making textures and backgrounds. Formerly Adobe TextureMaker, Texture Creator 2.0 lets you test how a texture will tile in a Web browser. Another terrific tool for making textures and backgrounds is Xaos Tools' $199 Terrazzo 2. This Photoshop plug-in lets you create textures from scratch or base them on an existing image.

High-class clip media has a benefit that goes beyond the budget and schedule: browsing beautiful collections of photos and user-interface elements can fire up your creative juices. At least they have that effect on me. But then, I've been known to keep the photos that come with new wallets. **m**

Next month: Using stock audio

Contributing editor JIM HEID's latest book is *HTML & Web Publishing Secrets* (IDG Books Worldwide, 1997).

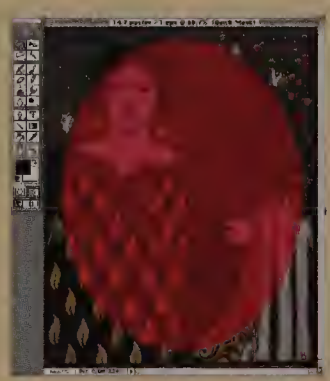
Adding an Arty Edge

Adobe Photoshop 4.0's Quick Mask mode and bundled effects make it easy to create attractive edge effects.

1. Activate Photoshop's Quick Mask mode by clicking on the tool palette's Quick Mask icon.

2.

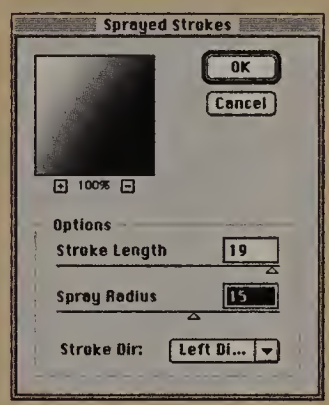
   Select an area within the image; for the best results, leave a generous amount of image outside the selection.

3. 

   Use the Edit menu's Fill command to fill the selection with black.

4. After you've filled the selection, it appears as a mask; red areas of the image are protected from alteration. Choose None from the Select menu.

5. Choose Gaussian Blur from the Filter menu's Blur submenu, and specify a radius of between 10 and 20 pixels.

6. 

   Choose a brushstroke effect from the Filter menu's Brush Strokes menu. Sprayed Strokes works well. Fine-tune the filter's options to get an edge you like. (To see the edges, drag the image within the preview area.) To apply the filter, click on OK or press return.

7. Exit the Quick Mask mode by clicking on the Standard Mode icon.

8.

   After you exit Quick Mask mode, choose Inverse from the Layers menu to select the unprotected (and now filtered) area of the image. Delete the selection by pressing the delete key.

9.

   Now you see the selection you made with its artistic edge effect.

Publishing Workshop

Get the Most from Photoshop 4

by David Blatner

If you publish anything—a magazine, a Web page, even a newsletter—the chances are good that you use Adobe Photoshop. This program is so incredibly complex and rich that many people spend all day, every day, sitting hypnotized before their screens, trying to find the best way to do their work. Wouldn't it be great to eliminate the glassy-eyed stare and get just a little more efficient, especially now that you're using Photoshop 4?

Help is here: read on for a few of my favorite techniques. These tricks help me get my work done faster and with much less stress.

Relearning Photoshop

If you've updated recently to Photoshop 4, you've probably been frustrated by the subtle changes in its interface. Your period of adjustment to Photoshop's new look-and-feel will seem a lot shorter if you arm yourself with a few basic tools and shortcuts.

One of the hardest things to get used to is the way Photoshop 4 makes a new layer every time you create type or paste an image. It never seems to wind up where you want it, and you must use the move tool to reposition it. At first it's frustrating, but don't get mad; just hold down the ⌘ key. That gives you the move tool temporarily so you can move the whole layer to where you need it.

Then, if you don't want your type or pasted image on a separate layer, you can press ⌘-E to drop it down onto the layer below (a new shortcut in version 4). You'll find ⌘ and ⌘-E to be your friends in this new version.

Here's another type problem: I always forget to pick the color I want my text to be before I actually create it, so the text comes in the wrong color. Instead of selecting Undo, I just pick a new color and press option-shift-delete. That shortcut fills a layer with the foreground color as though the Preserve Transparency feature were turned on—it won't fill any transparent pixels. My text gets a new color, and the rest of the layer stays transparent.

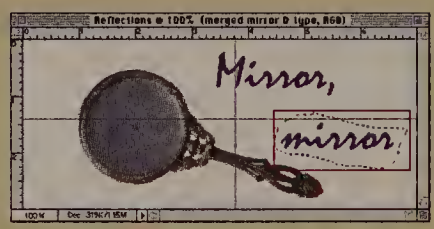
Context-Sensitive Controls

Another of my favorite Photoshop 4 tricks is to hold down the control key (not the ⌘ key) when clicking; up pops a context-sensitive menu. Which menu you get depends on what tool you have selected and where your cursor is when you click. If you've got a painting tool selected, you get a list of paint modes; control-clicking with a selection tool gives

Snapping to Guides

Photoshop 4 lets you drag guides out of the rulers onto your document, for placing elements precisely (⌘-R turns the rulers on or off). You can snap elements to those guides by dragging the edge of an element within a few pixels of a guide. You can snap the center of the element to a guide by dragging its centerpoint near the guide.

A Great Trick Photoshop's snap-to-guides feature lets you place a particular pixel at a particular point. When you option-drag a rectangular or oval selection marquee, the pixel you start on becomes the exact center of the selection. Now placing that pixel is a snap.



Snap a Selection When you move a selection (left), Photoshop surrounds it with an invisible box (represented here in red). When you release the mouse, Photoshop reduces your selection to the pixels on the layer (right). Here, the bounding box's left edge is snapping to the vertical guide and the center is snapping to the horizontal guide.

Snap a Layer If you move a layer around without making a selection, the bounding box encompasses everything on the layer. Here, the left and top edges of the layer's bounding box are snapping to the guides.

you a list of selection and layer features; and if you have the move tool selected, you see a menu of whatever layers you're currently over (if you don't have the move tool selected, you can get this menu by ⌘-control-clicking). Select one of the layers to switch to that layer.

New File, Same Size

Need a second document the same size as the first? Don't waste your time writing down pixel dimensions. Photoshop's Window menu remains available (it doesn't gray out) when you've got the New, Canvas Size, or Image Size dialog boxes open, and you can copy file settings (pixel dimensions, resolution, and so on) from any other file listed at the bottom of the Window menu.

Rebuild Type List

If you use a font-management utility such as Alsoft's MasterJuggler, Symantec's Suitcase, or Adobe's ATM Deluxe, you've probably noticed that Photoshop doesn't automatically update its list of fonts when you add or remove a font with the utility. You might assume that you have to quit and relaunch Photoshop. Fortunately, there's a better way.

In Photoshop 4, shift-clicking with the type tool forces the program to update its font list. In previous versions of the software, you have to hold down the option key and click the mouse button (with the type tool selected) at exactly the same time (if you click just a little too late, the option key gives you the eyedropper; if you click too soon, Photoshop just brings up the Type dialog box without resetting the font list).

Importing EPS Files

How can I get my Adobe PageMaker and QuarkXPress files into Photoshop? That's one of the questions I get asked most often in my seminars. In the past, you had to go through all kinds of machinations when you wanted to import anything other than an Adobe Illustrator EPS file; Photoshop 4 lets you open *any* EPS file and rasterize it (turn it into a bitmapped image). Surprisingly, Adobe has hardly advertised this incredibly great feature at all. Just select Open from the File menu and select the EPS graphic.

Replay Last Settings

Want to make the same Curves adjustment to a number of different images? Hold down the option key when you select Curves, and the dialog box automatically resets to the way it was when you last applied the effect. This also works for Levels, Hue/Saturation, and most of the other features in the Adjustment submenu in the Image menu. Even better, just add the option key to the feature's keyboard shortcut (⌘-option-M for Curves instead of ⌘-M, and so on).

Learn a Trick, Get a Bonus

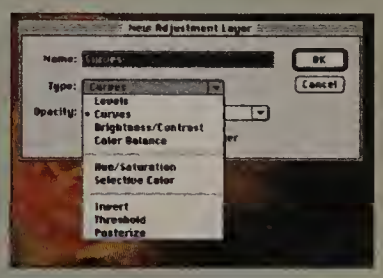
If you work by the hour, you probably don't mind sitting in front of the computer screen, slowly falling into a pixel trance. But if you've got to get your work done quickly, you've got to learn all the tricks you can. There are many hidden treasures buried deep within Photoshop—such as holding down the ⌘ key when selecting About Photoshop from the Apple menu (in 4.0, then ⌘-click on the nose you'll see). Taking the time to learn them now will pay off later with increased efficiency—who knows, maybe even a raise. **m**

DAVID BLATNER is coauthor of *Real World Photoshop 4* (Peachpit Press, 1997). You can write to him at *david@moo.com*.

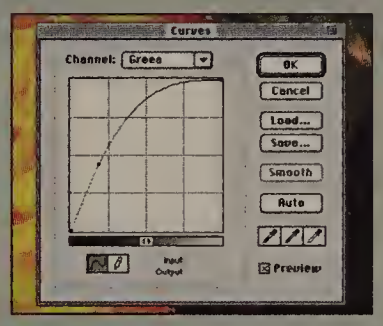
Adjustment Layers Help You Select Edges

Photoshop 4's New Adjustment Layer feature is great for tonal and color correction, but it can help you make selections, too. If you're having a hard time getting a good high-contrast edge with which to make a selection, add an adjustment layer (either Curves or Levels works well) and give the layer an extreme setting to bring out the edge as best you can. After you make your selection, throw the adjustment layer away. Your original image isn't harmed at all, and you save a lot of time. (Thanks to digital artist Greg Vander Houwen for this one.)

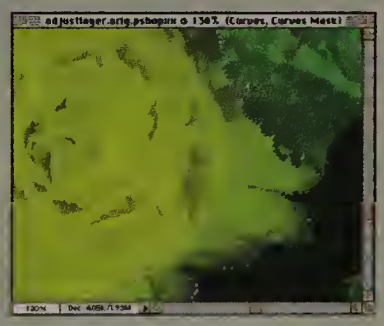
1 This image contains edges that are very difficult to discern (notice the dark edges of the petals), making it nearly impossible to select just the rose cleanly and quickly.



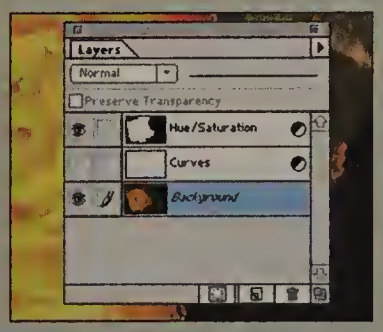
2 Add a new adjustment layer (⌘-click on the New Layer button or select New Adjustment Layer from the pop-out menu). To enhance edges, I like to adjust Curves.



3 Photoshop displays the settings dialog box for the adjustment layer you've chosen. An extreme adjustment to the green channel brings out the edges in this image.



4 Once you have an adjustment that makes the edges clear, you can use Photoshop's selection tools more easily. I was able to select the rose in just a few steps.



5 To edit the selected pixels, create a new adjustment layer (the selection automatically becomes a layer mask). Now throw away the Curves adjustment layer (it was useful only for making the selection).

6 Only the unmasked parts of the image (here, the rose) are affected by my new Hue/Saturation settings. When you like the changes, flatten the image's remaining layers, and prepare it for print.

Graphics Workshop

Painting through a Line-Art Mask in Photoshop

by Cathy Abes

ARTIST John Ritter produces digital and traditional illustration in his Aptos, California, studio for a variety of clients, including Time Warner, IBM, Adobe Systems, Mercury Records, and Dow Jones. He has lectured on illustration and design at American Institute of Graphic Arts in Charlotte, North Carolina.

HOW IT WAS DONE Ritter uses this painting technique to add dimension and painterly effects to line art—both clip art and his own pen-and-ink drawings. Using the line art as a mask, he paints through it and adds textures to the background image while maintaining the outline of the line art. He originally used this process with type, painting through the character forms; later he realized it would work just as nicely with images.

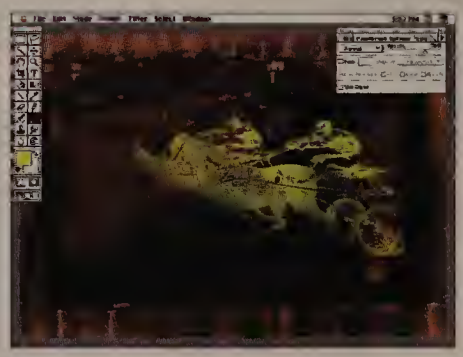
For this illustration, Ritter began by scanning a photograph he'd taken of the wall of an old warehouse in San Francisco, making it the background image. The line art came from a compilation of royalty-free historical illustrations and designs. The texture was a canvas he'd covered with layer after layer of paint and then scanned into Photoshop.

After painting through the mask, adding a drop shadow to the line art, and blending in the canvas texture, Ritter boosted the contrast to make the image more vibrant.

TOOLS **Hardware:** Power Macintosh 8500/120 with 150MB of RAM and a 2GB internal hard drive; two FWB 4GB external hard drives; a Radius 17-inch Precision Color Display; an Agfa Arcus II Scanner; and a Wacom ArtZ Graphics Tablet. **Software:** Adobe Photoshop 3.0. m

1 The artist scanned a photograph that he'd taken of a warehouse wall in San Francisco to use as the background for the illustration.

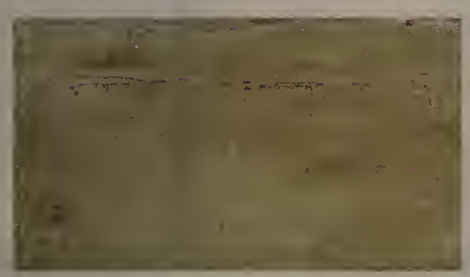
2 Ritter then scanned an old etching (from *The Clip Art Book, Studio Edition*, by Gerard Quinn; Crescent Books, 1994), pasted the scan into a new alpha channel in the wall image (channel 5), and inverted it. Next, he loaded that channel.



3 Creating a custom 200-pixel brush at 50 percent opacity, Ritter began painting through the line-art mask, varying the opacity between 50 and 80 percent and using several shades of green and orange.

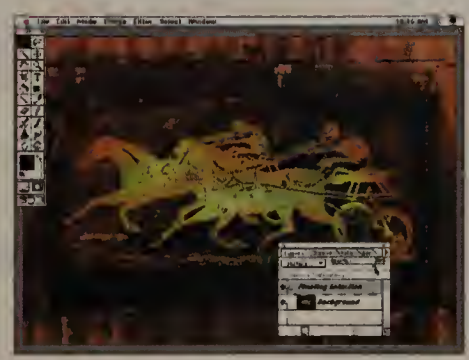
4 To add a drop shadow, he feathered the selection with a 20-pixel radius and offset the selection, using ⌘-option-shift to drag it down and to the left while constraining it. He saved the selection to a new alpha channel (6). While viewing just channel 6, he loaded channel 5 and filled it with 100 percent black to protect the painted areas.

5 Back in the main image, Ritter loaded the feathered version of the scan (channel 6); in the Brightness/Contrast controls he reduced the brightness to -41 to darken only the shadows around the line art.



6 To add more texture to the image, he then scanned in a piece of canvas on which he'd built up numerous layers of paint.

7 After loading channel 5, Ritter pasted the painted canvas texture into that channel as a floating selection. Initially the texture came in at full opacity and obliterated the painting underneath.



8 Using controls in the Layers palette, Ritter tried compositing the floating selection with the background layer in Multiply mode at various opacities, finally settling on 80 percent to allow the painted areas to show through with only the darker parts of the texture still visible.

Read Macworld®? You should be at Mactivity®

The Macintosh Professionals Conference.

Keynotes

Mactivity is proud to host the most prominent figures in the computer industry presenting their views on Apple, the Internet and their visions for your computing world of tomorrow.

Marc Andreesen
Netscape Communications Corporation

Wednesday, June 18th 1:00 - 1:45

Don Crabb
MacWEEK

Thursday, June 19th 9:00 - 9:45

See all the Coolest Products—For FREE!

Webmasters Vendor Fair

June 15 5:00-9:00pm

Mactivity's Webmasters Vendor Fair has over 50 companies all showing off the hottest innovations in Web servers, CGIs, plug-ins, content creation tools, scripting tools, databases, commerce solutions and more, this one evening product viewing is the ultimate Macintosh Webmaster event.

5001 Great America Parkway
Santa Clara Convention Center
Santa Clara, CA 95054

Product Showcase

June 18-20 10:00-4:00pm

Now in its 7th year, the Mactivity Product Showcase, is the perfect place for Macintosh professionals to find the solutions that they need to connect LANs to the Internet, create Internet servers, solve Macintosh OS problems, build fast networks, and much more.

The Product Showcase features over 100 vendors, all offering solutions for Macintosh professionals.

© 1997 Mactivity, Inc. All rights reserved. Mactintosh is a registered trademark of Apple Computer. All other trademarks are registered with their respective companies.

Technolog Theatre

Attend our Technology Theater Free Lecture Series.

- Apple's New OS!
- Wireless Internet Acce
- The latest Claris Produc
- The Best Mac/Internet Solutions!

.....and more sessions being scheduled!

Daily Giveaways

Over $10,000 in prizes to be given away!

Win cool software like Adobe PhotoShop, PageMill and Acrobat as well as dozens of other Macintosh titles! Interne software, Web site creat tools, productivity applications and more be given away daily!

Hands-on Classroom

(space limited!)

We have an exciting lineup of hands-on training classes designe to get you up and going with the most popular products you'll need to plug into the World Wid Web.

Learn how it's done!

The Mactivity Conference is world famous for creating a fun, interactive environment where the community of Macintosh professionals learn the latest about Macintosh technologies. Two great conferences are offered: The Webmasters Conference and The Mac Managers Conference. For information or to request a FREE 16-page brochure call Mactivity at 408.354.2500 or 800.798.2928 (inside the US).

Free Exhibits Pass Register Online!

Your Exhibits Pass gets you access to keynotes, vendor fair, product showcase, technology theater, hands-on classroom and entry for the daily drawings. Register today at:

http://www.mactivity.com

Macworld

Advertiser Index

Say you saw it in Macworld. To purchase products advertised in this issue call the phone numbers below or use the reader service number for our Product Information Card located after the product index.

Page No.	Advertiser	Reader Srvc. No.	Phone
61	Active Arts	50	888/ACTIVE-1
11	Adobe	252	800/521-1976
134	Adobe	253	800/521-1976
26	AEC Software	203	800/450-1982
10	Aladdin Systems	21	408/761-7200
114,115	Alliance Peripheral Systems	61	800/874-1428
166,167	Alliance Peripheral Systems	62	800/874-1428
76	Alsoft	140	800/257-6381
45	American Power Conversion	72	800/788-2208
6	Anthro	—	800/325-3841
39	Apple Computer	—	—
67	Apple Computer	—	—
79	ATI Technologies Inc	256	—
164	Big Mac Computers	101	800/761-1999
63	binuscan	6	800/881-2352
157	Bottom Line Distribution	63	800/990-5698
9	Caere Corporation	69	800/535-SCAN
10	CE Software, Inc.	170	800/523-7638
160,161	ClubMac	96	800/CLUB-MAC
151,153	Computer Discount Warehouse	2	800/861-4CDW
53	Corel Corporation	78	800/836-3729
168,169	CRA Systems, Incorporated	20	800/375-9000
73	Dataviz	79	800/780-1466
21	Deneba Software	57	800/733-6322
24	Diehl Graphsoft	46	410/290-5114
165	DigiCore	—	800/858-4622
59	EarthLink Network	8	888/534-7092
16	ENCAD Incorporated	65	800/45-ENCAD
18	Engineered Software	12	910/299-4843
28,29	Epson America	—	800/BUY-EPSON
42	Epson America	—	800/BUY-EPSON
162,163	Express Direct	81	800/765-0020
66	Extensis	13	800/796-9798
41	Fractal Design	—	800/846-0111
82	Fujitsu	202	800/626-4686
100,101	GDT Softworks	32	800/663-6222
71	Hitachi NSA	74	800/441-4832
175	J & R Computerworld	282	800/221-8180
BC	Kensington Microware Ltd.	1	800/535-4242
57	Kingston Technology	201	800/435-0677
156	L.A.Trade	—	800/433-3726
90,91	LA CIE	52	800/999-1332
122-127	Macworld Boston Expo	—	—
148,149	Mac Bargains	71	800/619-9091
170,171	MacConnection	145	800/800-3333
158,159	MacMall/Creative Computers	131	800/222-2808
154,155	MacMarket	258	800/223-4622
128	MacSoft	30	800/229-2714
172,173	MacWarehouse	150	—
174	The Mac Zone	70	800/436-0606
12	Mag Innovision	25	800/747-6249
150	MegaHaus	245	800/786-1184
27	MetaTools, Inc.	5	800/472-9025
51	Microtek Lab, inc.	—	800/654-4160
7	Mitsubishi Electronics America	261	800/937-2094
4,5	Motorola Computer Group	207	800/759-1107
8	Orange Micro	33	714/779-2772
19	Palm Computing	—	800/881-7256
75	PhotoDisc	114	800/528-3472
IBC	Power Computing Corporation	161	800/410-7693
IFC,1	Power Computing Corporation	151	800/410-7693
176	PowerTools	63	800/891-4307
147	ProDirect	135	800/524-9952
13	Sony Corporation	—	800/472-SONYID1
81	Syncronys Soft Corpo	55	888/777-5600
55	Tektronix	143	800/835-6100
177	Telecommuting and Home Office Expo	—	800/393-THOE
22,23	Umax Computer	99	800/625-UMAX
35	Umax Technologies	45	800/546-8557
14,15	ViewSonic	59	800/888-8583
12	VST Technologies, Inc.	73	508/263-9700
77	Xante Corporation	112	800/926-8839

Macworld Product Index

A quick and easy product index from Macworld. Simply use this index to find the page or advertiser of the products which interest you. Then, use the reader service number for our FastFacts Product Information Card located on the following page.

SOFTWARE

BUSINESS

Page No.	Advertiser	Reader Srvc. No.
26	AEC Software	203
53	Corel Corporation	78

CAD/CAM

Page No.	Advertiser	Reader Srvc. No.
24	Diehl Graphsoft	46
18	Engineered Software	12

COMMUNICATION

Page No.	Advertiser	Reader Srvc. No.
73	Dataviz	79

EDUCATIONAL

Page No.	Advertiser	Reader Srvc. No.
61	Active Arts	50

ENTERTAINMENT

Page No.	Advertiser	Reader Srvc. No.
61	Active Arts	50
128	MacSoft	30

GRAPHICS/DTP

Page No.	Advertiser	Reader Srvc. No.
11	Adobe	252
134	Adobe	253
63	binuscan	6
53	Corel Corporation	78
21	Deneba Software	57
66	Extensis	13
41	Fractal Design	—
100	GDT Softworks	32
27	MetaTools, Inc.	5
75	PhotoDisc	114

OCR

Page No.	Advertiser	Reader Srvc. No.
9	Caere Corporation	69

ONLINE

Page No.	Advertiser	Reader Srvc. No.
59	EarthLink Network	8

UTILITIES

Page No.	Advertiser	Reader Srvc. No.
10	Aladdin Systems	21
76	Alsoft	140
10	CE Software, Inc.	170
100	GDT Softworks	32
81	Syncronys Soft Corpo	55

HARDWARE

BOARDS

Page No.	Advertiser	Reader Srvc. No.
79	ATI Technologies Inc	256
8	Orange Micro	33

COMPUTER SYSTEMS

Page No.	Advertiser	Reader Srvc. No.
114	Alliance Peripheral Systems	61
67	Apple Computer	—
164	Big Mac Computers	101
168	CRA Systems, Incorporated	20
165	DigiCore	—
162	Express Direct	81
4	Motorola Computer Group	207
IBC	Power Computing Corporation	161
IFC	Power Computing Corporation	151
22	Umax Computer	99

DIGITIZERS/SCANNERS

Page No.	Advertiser	Reader Srvc. No.
51	Microtek Lab, inc.	—
13	Sony Corporation	—
35	Umax Technologies	45

DISPLAY

Page No.	Advertiser	Reader Srvc. No.
168	CRA Systems, Incorporated	20
71	Hitachi NSA	74
90	LA CIE	52
12	Mag Innovision	25
7	Mitsubishi Electronics America	261
14	ViewSonic	59

EXPANSIONS/UPGRADES

Page No.	Advertiser	Reader Srvc. No.
57	Kingston Technology	201
156	L.A.Trade	—

HARD DISKS/STORAGE

Page No.	Advertiser	Reader Srvc. No.
166	Alliance Peripheral Systems	62
157	Bottom Line Distribution	63
160	ClubMac	96
82	Fujitsu	202
57	Kingston Technology	201
90	LA CIE	52
150	MegaHaus	245
176	PowerTools	63
147	ProDirect	135

INPUT DEVICES

Page No.	Advertiser	Reader Srvc. No.
BC	Kensington Microware Ltd.	1
13	Sony Corporation	—

MICRO PROCESSOR

Page No.	Advertiser	Reader Srvc. No.
IBC	Power Computing Corporation	161
IFC	Power Computing Corporation	151

MISCELLANEOUS

Page No.	Advertiser	Reader Srvc. No.
45	American Power Conversion	72
19	Palm Computing	—

MULTIMEDIA

Page No.	Advertiser	Reader Srvc. No.
4	Motorola Computer Group	207

POWERBOOK

Page No.	Advertiser	Reader Srvc. No.
39	Apple Computer	—
12	VST Technologies, Inc.	73

PRINTERS

Page No.	Advertiser	Reader Srvc. No.
16	ENCAD Incorporated	65
28	Epson America	—
42	Epson America	—
55	Tektronix	143
77	Xante Corporation	112

SECURITY

Page No.	Advertiser	Reader Srvc. No.
45	American Power Conversion	72

SERVICES

ON LINE

Page No.	Advertiser	Reader Srvc. No.
59	EarthLink Network	8

TRADESHOWS/CONFERENCES

Page No.	Advertiser	Reader Srvc. No.
177	Telecommuting and Home Office Expo	—
122-127	Macworld Boston Expo	—

ACCESSORIES

FURNITURE

Page No.	Advertiser	Reader Srvc. No.
6	Anthro	—

MAIL ORDER

Page No.	Advertiser	Reader Srvc. No.
166	Alliance Peripheral Systems	62
164	Big Mac Computers	101
157	Bottom Line Distribution	63
160	ClubMac	96
151	Computer Discount Warehouse	2
165	DigiCore	—
162	Express Direct	81
175	J & R Computerworld	282
156	L.A.Trade	—
148	Mac Bargains	71
170	MacConnection	145
158	MacMall/Creative Computers	131
154	MacMarket	258
172	MacWarehouse	150
150	MegaHaus	245
176	PowerTools	63
147	ProDirect	135
174	The Mac Zone	70

DIRECTORY 209

TWO SIMPLE WAYS TO GET FREE PRODUCT INFORMATION

Macworld puts you in touch with the information you need most with two easy options:

1 dial 503.684.5370 Fax In Card

Simply fill In the questionnaire, circle the reader service numbers that correspond to the vendors you would like information from, then fax your form to us at 503.684.5370. FREE product information will be sent to you directly from vendors.

2 postage pre-paid Mail In Card

After filling In the questionnaire, circle the reader service numbers that correspond to the vendors you would like information from, then just drop the postcard in the mail. Vendors will send FREE product information directly to you.

Macworld
THE ESSENTIAL RESOURCE

☐ Check this box to subscribe to Macworld

YOU WILL BE BILLED $24 FOR A ONE-YEAR (12 ISSUE) SUBSCRIPTION (US ONLY). SUBSCRIPTION WILL BE SENT TO NAME & NOTED BELOW. PLEASE CHANGE IF MAILING ADDRESS IS DIFFERENT

PLEASE ANSWER THESE QUESTIONS, CHECK ALL ANSWERS THAT APPLY

1a. For which of the following Mac-related products do you specify, recommend, approve, purchase or influence the purchase?

1b. Which of the following do you plan to purchase in the next 12 months? (Check all that apply.)

	Purchase Involvement		Plan to Buy
Desktops/PowerBooks	◯	1	◯
Monitors	◯	2	◯
Printers	◯	3	◯
Storage Devices	◯	4	◯
Networking/Data Communications	◯	5	◯
Internet/Intranet products/services	◯	6	◯
Software: business/productivity	◯	7	◯
graphics/design	◯	8	◯
interactive publishing/ multimedia	◯	9	◯
entertainment	◯	10	◯
education	◯	11	◯
other software	◯	12	◯
Any other products	◯	13	◯

2. Are you employed, and involved in purchase decisions for 5 or more Macs? ◯ Yes (1) ◯ No (2)

3. What's Your Opinion?
What are your main frustrations in making Mac-related purchase decisions?

- ◯ 1. Lack of expertise in assessing products
- ◯ 2. Difficulty in installing or using products
- ◯ 3. Too many choices
- ◯ 4. Not enough choices
- ◯ 5. Unclear needs
- ◯ 6. Concern that cheaper, better products are about to come out
- ◯ 7. Other (please specify) _____

PRODUCT CATEGORY INFORMATION

For information on all of the products mentioned in an article or an entire category of advertised products, circle the appropriate number below.

951 Mail Order Companies
952 Printers
953 Scanner & Digital Cameras
954 Online/Internet
955 Storage Devices
956 Monitors & Graphics Boards
957 Utilities
958 Clip Art & Fonts
959 Memory
960 Draw/Paint/DTP Software
961 Image-Editing Software
962 Other Graphics Software

READER SERVICE NUMBERS FOR ADVERTISED PRODUCTS CAN BE FOUND IN THE PRODUCT'S AD AND IN BOTH THE ADVERTISER INDEX AND PRODUCT INDEX.

1	2	3	4	5	146	147	148	149	150	291	292	293	294	295	461	462	463	464	465	531	532	533	534	535
6	7	8	9	10	151	152	153	154	155	296	297	298	299	300	466	467	468	469	470	536	537	538	539	540
11	12	13	14	15	156	157	158	159	160	401	402	403	404	405	471	472	473	474	475	541	542	543	544	545
16	17	18	19	20	161	162	163	164	165	406	407	408	409	410	476	477	478	479	480	546	547	548	549	550
21	22	23	24	25	166	167	168	169	170	411	412	413	414	415	481	482	483	484	485	551	552	553	554	555
26	27	28	29	30	171	172	173	174	175	416	417	418	419	420	486	487	488	489	490	556	557	558	559	560
31	32	33	34	35	176	177	178	179	180	421	422	423	424	425	491	492	493	494	495	561	562	563	564	565
36	37	38	39	40	181	182	183	184	185	426	427	428	429	430	496	497	498	499	500	566	567	568	569	570
41	42	43	44	45	186	187	188	189	190	431	432	433	434	435	501	502	503	504	505	571	572	573	574	575
46	47	48	49	50	191	192	193	194	195	436	437	438	439	440	506	507	508	509	510	576	577	578	579	580
51	52	53	54	55	196	197	198	199	200	441	442	443	444	445	511	512	513	514	515	581	582	583	584	585
56	57	58	59	60	201	202	203	204	205	446	447	448	449	450	516	517	518	519	520	586	587	588	589	590
61	62	63	64	65	206	207	208	209	210	451	452	453	454	455	521	522	523	524	525	591	592	593	594	595
66	67	68	69	70	211	212	213	214	215	456	457	458	459	460	526	527	528	529	530	596	597	598	599	600
71	72	73	74	75	216	217	218	219	220															
76	77	78	79	80	221	222	223	224	225															
81	82	83	84	85	226	227	228	229	230															
86	87	88	89	90	231	232	233	234	235															
91	92	93	94	95	236	237	238	239	240															
96	97	98	99	100	241	242	243	244	245															
101	102	103	104	105	246	247	248	249	250															
106	107	108	109	110	251	252	253	254	255															
111	112	113	114	115	256	257	258	259	260															
116	117	118	119	120	261	262	263	264	265															
121	122	123	124	125	266	267	268	269	270															
126	127	128	129	130	271	272	273	274	275															
131	132	133	134	135	276	277	278	279	280															
136	137	138	139	140	281	282	283	284	285															
141	142	143	144	145	286	287	288	289	290															

PLEASE PRINT OR TYPE ALL INFORMATION.
Expires Oct. 22, 1997. S1 July 1997

Name _____
E-mail _____
Address _____
City _____
State _____ Zip _____
Title _____
Company _____
Phone _____ Fax _____

TWO SIMPLE WAYS TO GET FREE PRODUCT INFORMATION

Macworld
THE ESSENTIAL RESOURCE

FREE

Macworld puts you in touch with the information you need most with two easy options — fax back or mail in the reader service card.

Fax back. Mail in. Just don't miss out.

Fold here and close with tape. Do not staple.

50% TOTAL RECOVERED FIBER
10% POST-CONSUMER FIBER

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 677 PORTLAND OR
POSTAGE WILL BE PAID BY ADDRESSEE

READER SERVICE DEPARTMENT
12950 SW PACIFIC HWY STE 7
TIGARD OR 97223-9747

Award-Winning High Performance Products with Superior Service and at Unbeatable ProDirect Prices

Professional Storage and Computer Solutions

ProDirect

Never a Surcharge!
No Sales Tax Outside MN
Same Day Shipping

"Test Drive" any Hard Drive We Sell for almost 3 months with Our Unbeatable 90 Day Performance Guarantee.

Always the right drive for the job guaranteed! 90 Day Performance Guarantee

800-524-9952

Order Hours: M-F:8AM-7PM	SAT:10AM-3PM	ProDirect Fax:	612-941-1109
International Orders:	612-884-0012	Toll Free Tech Support	800-524-9952

On The Web @ www.pdisales.com
ProDirect E-Mail: info@pdisales.com

Work Faster, Work Smarter.

SPEED-TUNED HARD DRIVES

What sets ProDirect hard drives apart from the rest goes way beyond just our attractive PowerStor enclosure and our 90 Day Performance Guarantee! Our shielded 40 watt power supply, flow-through cooling system for dependability, a stackable, horizontal or vertically positionable PowerStor cabinet with an active terminator and cable, and the award-winning difference of "Speed-Tuning". Setting up each drive to the manufacturers optimum operating specifications for the Macintosh takes us a little extra time, but Speed-Tuning makes all the difference in overall performance. Independent lab tests give ProDirect drives awards because of that difference, and you can only get it from ProDirect.

All Hard Drives Include FWB Hard Disk Toolkit PE The Best Available!

Quantum Drives Quantum

"F&W" MEANS FAST & WIDE

SIZE	DRIVE	SEEK TIME	RATE	INTERFACE	INT.	EXT.
1080MB	Atlas 7200 RPM	Bms	-	Fast SCSI 2	269	329
1080MB	Atlas 7200 RPM	Bms	8.6MB/Sec.	F&W SCSI 2	269	329
2.0GB	Saturn	B.5ms	-	Fast SCSI 2	425	485
2.0GB	Atlas 7200 RPM	Bms	-	Fast SCSI 2	495	565
2.0GB	Atlas 7200 RPM	Bms	11.0 MB/Sec.	F&W SCSI 2	555	630
4.5GB	Atlas II 7200 RPM	7.9ms	-	Ultra SCSI 3	795	855
4.5GB	Atlas II 7200 RPM	7.9ms	12.5 MB/Sec.	F&W Ultra SCSI 3	885	960
9.1GB	Atlas II 7200 RPM	7.9ms	-	Ultra SCSI 3	1385	1445
9.1GB	Atlas II 7200 RPM	7.9ms	12.7 MB/Sec.	F&W Ultra SCSI 3	1495	1565

VALUE DRIVES from Quantum

365MB	Quantum	10ms	-	Fast SCSI 2	155	215
535MB	Quantum	9ms	(5400RPM,512K Buffer)	Fast SCSI 2	N/A	229
1280MB	Fireball TM	10.ms	-	Ultra SCSI 3	225	285
2.1GB	Fireball TM	10.5ms	-	Ultra SCSI 3	295	355
3.2GB	Fireball TM	10.5ms	-	Ultra SCSI 3	345	395

All Value Drives are 4500 RPM, 128K Buffer with a 3 year manufacturers warranty.

IBM UltraStar Drives IBM

SIZE	DRIVE	SEEK TIME	RATE	INTERFACE	INT.	EXT.
2.2GB	UltraStar ES (5400 RPM)	B.5ms	-	Ultra SCSI 3	425	485
4.3GB	UltraStar 2 ES 34300 (5400 RPM)	B.5ms	-	Ultra SCSI 3	575	635
4.3GB	UltraStar 2 ES 34300W	B.5ms	16.2 MB/Sec.	F&W Ultra SCSI 3	595	675
4.5GB	UltraStar 2 XP 34550 (7200 RPM)	B.5ms	-	Ultra SCSI 3	745	805
4.5GB	UltraStar 2 XP 34550W	8.5ms	16.2 MB/Sec.	F&W Ultra SCSI 3	795	865
9.1GB	UltraStar 2 XP 39100W	7.9ms	-	Ultra SCSI 3	1445	1505
9.1GB	UltraStar 2 XP Wide 39100W	7.9ms	15 MB/Sec.	F&W Ultra SCSI 3	1525	1595

All IBM UltraStar 2 drives listed are 7200 RPM,512K Buffer (unless noted otherwise)and are covered by a five year manufacturers warranty. Work station disk tab entry information available upon request.

Micropolis Drives MICROPOLIS

SIZE	DRIVE	SEEK TIME	RATE	INTERFACE	INT.	EXT.
4.3GB	Micrp.Tomahawk 4345	7.9ms	-	Ultra SCSI 3	795	855
4.5GB	Micrp.Tomahawk 4345AV	7.9ms	2MB CACHE -	F&W Ultra SCSI 3	875	935
4.5GB	Micrp.Tomahawk 4345W	7.9ms	-	F&W Ultra SCSI 3	830	900
4.5GB	Micrp.Tomahawk 4345WAV	7.9ms	2MB CACHE -	F&W Ultra SCSI 3	955	1025
9.1GB	Micrp.Tomahawk 3391	7.9ms	-	Ultra SCSI 3	1395	1455
9.1GB	Micrp.Tomahawk 3391AV	7.9ms	2MB CACHE -	Ultra SCSI 3	1475	1535
9.1GB	Micrp. Tomahawk 3391W	7.9ms	-	F&W Ultra SCSI 3	1415	1485
9.1GB	Micrp. Tomahawk 3391WAV	7.9ms	2MB CACHE -	F&W Ultra SCSI 3	1495	1570

All Micropolis drives are 7200 RPM, 512K Buffer and covered by a 5 year warranty.
Mounting brackets and cables available for all current and former Mac's & Clones

Barracuda 2 Series Seagate

SIZE	DRIVE	SEEK TIME	RATE	INTERFACE	INT.	EXT.
2.5GB	Barracuda ST32171N	Bms	-	Ultra SCSI 3	575	635
2.5GB*	Barracuda ST32171W	Bms	17.6 MB/Sec.	F&W Ultra SCSI 3	635	695
4.5GB	Barracuda LP ST34371N	7.9ms	-	Ultra SCSI 3	885	945
4.5GB*	Barracuda LP ST34371W	7.9ms	17.6 MB/Sec.	F&W Ultra SCSI 3	945	1015
9.1GB	Barracuda 19171N	7.9ms	-	Ultra SCSI 3	1675	1735
9.1GB*	Barracuda 19171W	7.9ms	1B MB/Sec.	F&W Ultra SCSI 3	1745	1825

MacUser BEST BUY

SPEED-TUNING DOES IT AGAIN!
"If you're a desktop-video or graphics professional, you need not only a lot of capacity but also a lot of speed: The 9 Gigabyte ProDirect PD19171N is an excellent choice." --MacUser June'97

4.5GB	Cheetah ST34501W	7.9ms	(10,000 RPM) -	F&W Ultra SCSI 3	1045	1125

CALL FOR AV RAID PERFORMANCE SPECS WITH CHEETAH DRIVES! AWESOME!!!

9.0GB	Elite ST410800W (5400 RPM)	11ms	16MB/Sec.	F&W SCSI 2	1875	1975
23GB	Elite23 ST423451N	Bms		Ultra SCSI 3	4095	4195
23GB	Elite23 ST423451W	8ms		F&W Ultra SCSI 3	4195	4295

TRUEVISION Tech Notes on Wide Barracuda Drives:
"The products have been tested and perform above our expectations. They run exceptionally cool, spin at 7200 RPM and move data fast. This is a major step forward and a real win for the customer." *TRUEVISION Recommended Product

Barracuda drives are 7200 RPM,512K Buffer (unless noted) w/5 yr. manf. warranty.

Fujitsu Drives FUJITSU

SIZE	DRIVE	SEEK TIME	RATE	INTERFACE	INT.	EXT.
4.5GB	Speed-Tuned for AV	512K Buffer	-	Ultra SCSI 3	835	895
4.5GB	Speed-Tuned for AV	512K Buffer	-	F&W Ultra SCSI 3	845	920
9 GB	F2959 Speed-Tuned for AV	Bms	512K Buffer -	Ultra SCSI 3	1375	1435
9 GB	F2959W Speed-Tuned for AV	Bms	512K Buffer -	F&W Ultra SCSI 3	1425	1495

All Fujitsu drives listed are 7200 RPM with a five year manufacturers warranty.

ALL DIGIDESIGN FIRMWARES AVAILABLE

FWB RAID TOOLKIT WITH ANY PURCHASE **$99**

Speed-Tuned "38 Special" ProDirect PDI 3800
Utilizing a 4 Gig Wide UltraSCSI Quantum XP34550W

★★★★ MACWORLD 2nd Year In a Row! MW Editors' Choice
"...fast, at 7200 RPM nicely priced. Who could ask for anything more?" MacWorld- May 1997
INT. $895 EXT. $970

CALL OR SEE US ON-LINE pdisales.com

Syquest SyJet 1.5 GB Removable with One Cartridge **$489**
Additional Cartridges: $119

iomega JAZ 1 GB Removable with One Cartridge **$485**
Additional Cartridges: $119

Pinnacle Micro APEX 4.6GB Optical Drive with One Cartridge **$1475**
Additional Cartridges: $225

YAMAHA CD-R400 6X Reader 4X Writer
2Mb Buffer with Toast Pro Software **$795**
650 MB CDR Media $7.99 w/CDR Purchase

IBM Business Partner
ProDirect is now an IBM Business Partner and we carry a full line of IBM Laptops, Desktop Computers and Accessories.

5 YEAR / 24 HOUR REPLACEMENT WARRANTY ON ALL PRODIRECT POWER RAID COMPONENTS

ProDirect PowerRAIDs

Base Raids Include: Pre Configured Adaptec 2940 Ultra Wide Accelerator or the Atto Multi Channel Express PCI Accelerator, Raid-Tuned Hard Drives, ProDirect Raid Center Enclosures and *Remus 1.4 Raid Software

8 GIG RAID-TUNED "38 SPECIAL" DOUBLE BARREL POWERRAID!
Utilizing Two 4 Gig QUANTUM PDI 3800's and Adaptec 2940 Controller
FIXED 2495 HOT SWAP 2695

Seagate PowerRAIDS Seagate

GB	DRIVES	ACCELERATOR	FIXED	HOT-SWAP
8	Barracuda ST3471W	Single Channel	2595	2795
8	Barracuda ST3471W	Multi Channel	2995	3195
8	Cheetah ST34501W	Single Channel	3295	3495
8	Cheetah ST34501W	Multi Channel	3675	3875
18	Barracuda ST19171W	Single Channel	4495	4695
18	Barracuda ST19171W	Multi Channel	4820	4995
27	Barracuda ST19171W Award Winning ProDirect Hard Drives And Exclusive Triple Fan Cooling	Multi Channel	6895	7195
36	Barracuda ST19171W Award Winning ProDirect Hard Drives And Exclusive Triple Fan Cooling	Multi Channel	8895	9095
54	Barracuda ST19171W Quad Fan Cooling And Dual Redundant Hot Swap 300 Watt Power Supplies	Multi Channel	13295	13495
63	Barracuda ST19171W Quad Fan Cooling And Dual Redundant Hot Swap 300 Watt Power Supplies	Multi Channel	14935	15695

Micropolis PowerRAIDS MICROPOLIS

GB	DRIVES	ACCELERATOR	FIXED	HOT-SWAP
8	Tomahawk M4345WAV With 2Mb Onboard Cache Buffer	Single Channel	2495	2695
8	Tomahawk M4345WAV With 2Mb Onboard Cache Buffer	Multi Channel	2995	3195
18	Tomahawk M3391WAV With 2Mb Onboard Cache Buffer	Single Channel	3795	3995
18	Tomahawk M3391WAV With 2Mb Onboard Cacha Buffer	Multi Channel	4265	4465
27	Tomahawk M3391WAV With 2Mb Onboard Cache Buffer And Exclusive Triple Fan Cooling	Multi Channel	5995	6345
36	Tomahawk M3391WAV With 2Mb Onboard Cache Buffer And Exclusive Triple Fan Cooling	Multi Channel	7595	7995
54	Tomahawk M3391WAV 2Mb Buffer, Quad Fan Cooling And Dual Redundant Hot Swap 300 Watt Power Supplies	Multi Channel	11095	11745
63	Tomahawk M3391WAV 2Mb Buffer, Quad Fan Cooling And Dual Redundant Hot Swap 300 Watt Power Supplies	Multi Channel	12660	13445

VIDEO EDITING EQUIPMENT

Adobe Premiere 4.2 Full Version 482
Truevision Bravado 1000 PCI 675
Truevision Bravado 1000 PCI 675
Targa 1000 PCI 2089
2000 Nubus 1675
Truevision Targa 2000 PCI 3265
Truevision Targa 2000 Pro PCI 3795
Radius Videovision 2.5.1 Nubus 1375
Radius Videovision 2.0 PCI 3479

Complete Video Workstations Configured to Your Specifications Available

SCSI ACCELERATORS adaptec ATTO

ATTO Express PCI Ultra SCSI Single Channel.	315
ATTO DualChannel Express PCI Ultra SCSI 3 40 MB/Sec.	589
FWB JackHammer Fast/Wide 16BIT SCSI 2 for Nubus Macs.	445
FWB PCI JackHammer Single Channel. Ultra SCSI PCI	385
ADAPTEC PowerDomain 2940 UWM Single Channel PCI	195
ADAPTEC PowerDomain 3940 UWM Dual Channel PCI	539

TAPE DRIVES

RETROSPECT SOFTWARE INCLUDED

GIGS	PRODUCT	MEDIA	TRANSFER/MIN.	INT.	EXT.
30	Quantum DLT2000XT	DLT	150MB	-	2775
40	Quantum DLT4000	DLT	180MB	-	4195
4	Conner TravanQIC	QIC 80 M	20 MB	-	485
4-8	Hewlett Packard C1533 DAT DDS-2	DAT 120M	60MB	-	895
4-8	Sony 7000 DAT DDS-2	DAT 120M	90MB	-	989
24-48	HP1553 Auto Tape Loader	DAT 120M	60MB	-	2495
5-7	ExaByte 8505XL	8mm	60 MB	1995	2055
14	ExaByte 8700	8mm	60 MB	N/A	1475

POWER MAC SYSTEMS

ProDirect MacSystems

MOTOROLA StarMax

StarMax Include Keyboard & Mouse, 512K Cache and 5 Year Warranty!

4000/200	604e	TW.	2259
4000/200	604e	DT.	2045
4000/160	604e	TW.	1615
4000/160	604e	DT.	1435
3000/240	603e	DT.	2035
3000/200	603e	TW.	1615
3000/200	603e	DT.	1440
3000/180	603e	TW.	1350
3000/180	603e	DT.	1240

ALL MAC SYSTEMS FROM PRO DIRECT COME WITH ALL FACTORY STANDARD OPTIONS OR YOU CAN TAKE A CREDIT ON ITEMS YOU WOULD LIKE US TO UPGRADE OR REMOVE.

Apple

9600/200	604e	TW	3445
9500/200	604e	TW	3195
8600/200	604e	TW	3095
7300/200	604e	DT.	2495
7300/180	604e	DT.	2095
4400/200	603e	DT.	1535

ALL APPLE PMACS INCLUDE SPEED-TUNED F&W 1 GIG HARD DRIVE

ProDirect

MAC MEMORY 4/8/16/32/64MB DIMMs/SIMMs...CALL

ProDirect, Inc. 10830 Nesbitt Ave South, Bloomington, MN 55437

ALL PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. RETURNED ORDERS ARE SUBJECT TO A RESTOCKING FEE. INTERNATIONAL CUSTOMERS PAY ALL SHIPPING CHARGES. ALL SHIPPING CHARGES ARE NON-REFUNDABLE. TO RETURN MERCHANDISE CALL FOR AN RMA NUMBER. ALL RMAS MUST BE RETURNED WITHIN 10 BUSINESS DAYS OF ISSUANCE. CUSTOMERS ARE RESPONSIBLE FOR SHIPPING CHARGES TO RETURN PRODUCT.

Circle 135 on reader service card

MAC BARGAIN$®

DI$COUNT PRICE$ ON QUALITY HARDWARE, $OFTWARE & ACCE$$ORIE$

Buy with Confidence Online from MAC BARGAIN$.

- NEW! To place an order, e-mail mac.bargains@mzi.com
- NEW! For detailed product information, e-mail mac.bargains.info@mzi.com
- Over 2500 products in stock

UMAX SuperMac Computers

As Low As $1199

- Upgradable PowerPC™ 603e and 604e processors running at up to 250MHz
- Up to 32MB RAM

UMAX

SUPERmac

UMAX Model	Order #	Price
SuperMac S900/200DP	#78176	$4299
SuperMac S900/250	#78174	$4899
SuperMac S900/233	#78175	$4199
SuperMac C600/240	#81533	$1995
SuperMac C600/200	#81532	$1699
SuperMac C600/180	#81531	$1499
SuperMac C500/180	#78173	$1199

Ask your Sales Advisor about the rest of the SuperMac line.

PowerComputing

PowerBase and PowerTower Computers

As Low As $1495

- PowerPC™ 603e and 604e processors running at up to 240MHz
- 8 or 16MB RAM, expandable to 160MB
- Up to a spacious 2GB hard drive

PowerComputing

PowerComputing Model	Order #	Price
PowerBase 200 DT	#83733	$1495
PowerBase 240 MT	#83735	$1995
PowerTower Pro 200	#86648	$2195
PowerTower Pro 225	#86642	$3695

And more! While supplies last, so call today.

StarMax™ MOTOROLA

StarMax Computers

As Low As $1249

- Upgradable 240, 200, 180 or 160MHz PowerPC™ 603e or 604e processor
- 16 or 32MB RAM, expandable to 144MB

Motorola

Motorola Model	Order #	Price
StarMax 3000/180 DT	#80868	$1249
StarMax 3000/180 MT	#80869	$1395
StarMax 4000/160 MT	#78190	$1895
StarMax 4000/200 MT	#78191	$2895

We carry the full line of StarMax Computers.
OT: Desktop MT: Minitower

Software

Activision

84360 Mech Warrior 2 ..... $44.83

Adobe

93952 Adobe Acrobat 3.0 ..... $184.49
88827 Adobe After Effects 3.0 CD $648.89
88205 Adobe Illustrator 7.0 Upgrade CD $89.98
83069 Adobe PageMaker 6.5 CD & 3.5" $548.89
37611 Adobe PageMaker 6.5 for Win95 Comp Upgr $118.89
83068 Adobe PageMaker 6.5 Upgrade $89.89
88414 Adobe PageMill 2.0 ..... $98.89
83932 Adobe PageMill 2.0 Upgrade $48.89
81740 Adobe Persuasion 4.0 Upgrade $118.89
83083 Adobe Photoshop 4.0 ..... $548.89
83084 Adobe Photoshop 4.0 Upgrade $134.49
04670 Adobe Premiere 4.2 CD $488.89
03971 Adobe Streamline 4.0 ..... $124.98

AEC Software

03456 Fast Track Schedule 4.0 PowerMac or Mac $167.20

Aladdin

05827 StuffIt Deluxe 4.0 ..... $66.11
85605 StuffIt Deluxe 4.0 Upgrade $32.36
81689 StuffIt Dlx 4.0/RAM Dblr 2 Bundle $79.99

Alien Skin

81008 Eye Candy $112.25

Berkeley Systems

83662 AfterDark 4.0 ..... Price After $10 Rebate: $27.46
83667 You Don't Know Jack Sports $27.46

Only $89.98

Adobe

Adobe Illustrator 7.0 Upgrade

- Greater flexibility with broad-based file format support!
- Fast image handling & 200 levels of undo!
- Maximum control!

Adobe #88205 NEW!

Bestware

99042 MYOB Accounting w/Payroll 7.0 ..... $121.03

Caere

91304 OmniPage Pro 7.0 Upgrade $104.93

Casady and Greene

85263 Spell Catcher $48.89

Claris

86444 Claris Organizer 2.0 ..... $62.45
92638 ClarisWorks 4.0 Comp/Ver Upgrade $62.38
88830 FileMaker Pro 3.0 ..... $179.99
88829 FileMaker Pro 3.0 Ver/Comp Upgrade CD/3.5" $89.90

Connectix

84048 Connectix RAM Doubler 2 ..... $53.63
90375 Connectix Speed Doubler for Mac 2.0 ..... $54.49

Corel

91628 Corel GALLERY 2 (Mac) $33.75
92234 Corel Stock Photo Library 1 ..... $869.89
84052 CorelDraw 6 Suite Ver/Comp Upgrade $142.26
03972 WordPerfect 3.5 Full Version CD-ROM $156.04
83933 WordPerfect 3.5.1 C/V Upgrade CD-ROM $78.75

Dantz

02586 Dantz Retrospect 3.0 ..... $136.13
04194 Dantz Retrospect w/10 User Remote $247.11

Dataviz

96908 MacLink Plus/Translator Pro 8.0 ..... $87.11
96908 MacLink Plus/Translator Pro 9.0 ..... $87.35

Datawatch

02077 Virex 5.7 for Mac $64.49

Davidson & Associates

82303 WarCraft: Battle Chest $49.99

DeLorme

96777 Street Atlas USA 3.0 ..... $37.44

QUARK QuarkXPress 3.32

Only $657.98

- Superior color capabilities
- Exceptional picture-handling
- Precise typographic controls

Quark #95320

Epson

82860 Epson PostScript Level2 SW for Stylus Pro $190.90
83649 Epson PostScript Level2 SW for Stylus XL $238.43

Equilibrium

98360 DeBabelizer Toolbox 1.6 ..... $233.40

Extensis

84233 PhotoTools $87.35
91343 QXTools $89.78

Farallon

96801 Farallon Timbuktu Pro for Mac 2.0 2-Pack $167.19
96800 Farallon Timbuktu Pro for Macintosh 2.0 ..... $127.38

Fractal

37624 Fractal Design Dabbler 2.0 CD $44.49
93967 Fractal Design Painter 4 Upgrade for Mac $124.49
91289 Fractal Design Poser $124.49

FWB Software

06271 CD-ROM Toolkit 2.0 ..... $46.24
00555 Hard Disk Toolkit 2.0 ..... $116.17
05476 Hard Disk Toolkit Personal Ed 2.0 ..... $46.24

GDT SoftWorks

00642 PowerPrint 3.0 ..... $88.56
82867 StyleScript 3.0 ..... $88.56

GraphSoft

97781 MiniCad 6.0 ..... $519.42

Insignia

87440 SoftWindows 95 v4.0 ..... $349.99
80576 SoftWindows 95 v4.0 Upgrade f/v1.0 ..... $89.78
87442 SoftWindows 95 v4.0 Upgrade f/v3.0 ..... $149.99
91088 SoftWindows for Performa $114.93

Intuit

93222 Quickbooks 4.0 for Mac $112.39
89653 Quickbooks Pro 4.0 for Mac $182.34
04230 Quicken 7 for Mac $39.99
89685 Quicken Deluxe 7 for Mac $57.52

Jump Development

92896 Optimem RAM Charger 2.0 ..... $28.75

Leister Productions

05984 Reunion 4.0 The Family Tree Software $89.78

Macromedia

86007 Director Multimedia Studio 2 Upgrade $498.89
92266 Director Multimedia Studio 2 ..... $988.89
82501 FreeHand 7 ..... $388.89
84212 FreeHand 7 Comp Upgrade $148.89
84242 FreeHand 7 Version Upgrade $148.89
92290 FreeHand Graphic Studio 7 ..... $498.98

MetaTools

81843 Bryce 2.0 ..... $168.9
84479 Kai's Power Goo $48.8
06668 Kai's Power Tools 3.0 ..... $124.4

Micromnt

87067 TechTool Pro $84.8

Microsoft

37803 Cinemania 97 for Mac CD $29.9
95750 Encarta 97 Mac CD $69.9
04545 Excel 5.0 for Mac Version Upgrade $118.8
04293 Flight Simulator 4.0 Mac $44.4
83316 Office 4.21 Upgrade w/Essential Tools $274.4
00596 Word 6.0.1 Version Upgrade f/Mac $118.8
05750 Works 4.0 for Mac $48.8

New Software

80599 Now Synchronize 1.0 for Palm Pilot $33.3
04191 Now Utilities 6.7 ..... $78.8

ParSoft

88389 A-10 Attack CD-ROM $43.6

Qualcomm

91072 Eudora Pro Mac $59.9

Quark

95320 QuarkXPress 3.32 Native PowerPC $635.4
78277 QuarkXpress/Immedia/Stratal/Auria $998.9
78275 QuarkXpress/QuarkImmedia $779.9

Symantec

06231 ACT! 2.5 for Mac $149.8
93976 Norton Utilities 3.2 Upgrade $38.8
04890 Norton Utilities 3.5 ..... $94.4
81746 SAM 4.5 Upgrade $28.8
80142 Suitcase 3.0 Upgrade $39.9

Monitors

Hitachi

91096 Rasterops SuperScan MC 20 ..... $1311.0
78921 Rasterops SuperScan MC 801 21" $1598.0

NEC

27642 NEC MultiSync C400 14" Monitor $295.5
80669 NEC MultiSync E1100 21" $1649.0
86793 NEC MultiSync M700 Clr Monitor 17" $769.9

Sony

82687 Sony Multiscan 100sf 15" Monitor $406.1
82686 Sony Multiscan 100sx 15" Monitor $364.1
06676 Sony Multiscan 15sf II Monitor $350.5
06687 Sony Multiscan 200sf 17" Monitor $771.5
06689 Sony Multiscan 200sx 17" Monitor $669.1
82688 Sony Multiscan 300sf 20" Monitor $1624.0

ViewSonic®

Optiquest V775 17" Monitor

(16" viewable)

- 0.26mm dot pitch
- 1600x1280 maximum resolution
- Invar shadow mask for razor-sharp focus

ViewSonic #36197

Only $635.98

ViewSonic

87259 ViewSonic 17EA Multimedia Monitor $629.9
88429 ViewSonic 17GA Monitor $649.9
23486 ViewSonic 17GS 17" Monitor $599.9
82695 ViewSonic G800 20" Monitor $1129.0
29932 ViewSonic PT770 17" Color $739.4

Video Cards

Connectix

85317 Connectix Color QuickCam for Mac $222.1

Call MAC BARGAIN$ before you buy!

1-800-619-9091

Add applicable sales tax (only in OH, WA). All shipments refer to "in stock" items, barring system failure, etc. Not responsible for typographical errors. Credit cards are not charged until the order is shipped. Most products ship the same day. Shipping options include Ground, 2nd Day and Overnight Delivery. Freight is based on an average product weight. Handling extra. Insurance available. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand.

For the Best Deals Around!

1-800-619-9091

92884 Connectix QuickCam for Mac $94.84

Radius

84143 Radius Thunder 3D Video Card $2950.00
90920 Radius Video Vision Studio PCI $3235.00

UMAX *The Magic of Color™*

Only $249.98

Lowest price 30-bit scanning!

Astra 600S

- Lowest price for 30-bit scanning
- Large, legal-size scanning area
- Superior 30-bit color quality

UMAX #80679

Accelerators

Adaptec

84834 PowerDomain 2940UW Kit SCSI-2 PCI $299.98

FWB

94121 FWB SCSI JackHammer $434.64

Modems

Baco

82765 FastMac V.34 33.6 FaxModem $102.27

Global Village

89312 PowerPort Platinum Pro V.34/ 10-T PC Card $425.48
89313 PowerPort Platinum V.34 PC Card $263.89
82575 TelePort Internet Edition 33.6 Fax/Modem $166.65
82574 TelePort SpeakerPhone Ed. 33.6 Voice $244.89

Megahertz

86528 CruiseCard Cellular Ready XJack 288 Mac $229.99

Supra

83465 Supra FAXModem V.34 33.6 External Mac $183.07
83856 SupraExpress 336e External $108.58

US Robotics

92953 Mac & Fax Sportster 28.8 V.34 ..... $166.59
87406 Mac Sportster Voice v.34 28.8 ..... $193.23
82064 Sportster 56K External Faxmodem $200.70

Storage

LoCie

82194 LaCie Fireball TM 1.280G8 Ext SCSI HD $349.98
82193 LaCie Fireball TM 1.280G8 Int SCSI HD $269.98
81241 Lacie Fireball TM 2.16G8 SCSI Int HD $338.30
89878 LaCie IQ 2160M8 Internal HD $363.52

MicroTech

86174 MicroTech 200M8 SyQuest External Drive $364.89
81085 Polaris II 1GB Ext HD $349.98
89641 Road Runner 800MB Power8ook Drive $625.00

Performantz

78372 Performantz 12X CD Drive $239.99

VST

87426 VST Expan 8ay 230M8 MQ Dr. f/P8 190/5300 ..... $381.31

Media

Fuji

91952 FUJI CDR-74 ..... $7.80
05717 Fuji DG90M 4mm Data Grade Tape 1.95G8 ..... $6.49
86292 FUJI Zip 100MB Mac Formatted 2-Pack $27.46

Iomega

97291 8emoulli MultiDisk 150M8 Single Cart $94.49
91160 Zip Media Mac100 3-Pack $49.99
91161 Zip Media Mac100 10-Pack $149.99
91159 Zip Media Mac100 Single $17.64

Kyocera

86251 Kyocera CDR-74 ..... $7.79

Performantz

83415 Performantz 200M8 Cart $49.98
83416 Performantz 88MB Cart $31.69
40359 Performantz SyQuest Comp EZ135M8 Cart $17.99

Philips

89805 Philips CD-Recordable 74-Min Disk $5.49

Sony

01140 Sony 3.5" 230M8 M.O. 512b/s $15.66
14368 Sony CD-R 650M8 74-Min Disk $6.53
86838 Sony SRS-91 Speakers $128.00
32804 Sony SRS-PC21 PC Speakers $22.20

SyQuest

00278 SyQuest 200M8 5.25" Removable Cartridge $332.29

EPSON

Only $299.98

Stylus Color 600

- Brilliant photo-quality 1440 dpi!
- QuickDry fast-drying inks
- Up to six ppm black or four ppm color

Epson #80667

97992 SyQuest 270M8 3.5" Removable Cartridge $52.29
02183 SyQuest 44M8 Cart Unformatted $42.29
00183 SyQuest Cart 88M8 ..... $45.59
24910 SyQuest EZ135M8 3.5" Cartridge 10-Pk $198.89
24909 SyQuest EZ135M8 3.5" Cartridge 5-Pk $109.99

Verbatim

21922 Verbatim CD-R 74-min 4X $5.28

Scanners

AGFA

02135 AGFA Arcus II Scanner, Mac Version $1595.00
89851 AGFA StudioScan IIsi Color Scanner $428.00
06686 AGFA StudioStar $995.00
06685 AGFA StudioStar LE $811.46

Epson

91939 Epson ES-1000C Flatbed $575.51
82673 Epson Expression 636 Professional $1778.00
82671 Epson Expression 636 Executive $870.16
82659 PhotoPC 500 Color Digital Camera $453.11

Microtek

06673 ScanMaker E3 ..... $189.66
06672 ScanMaker E6 Standard $340.00
78922 ScanMaker III w/TMA $1398.00

UMAX

80679 Astra 600S $249.00
81853 Powerlook 2000 Scanner $3892.00
83509 Powerlook II w/Full Photoshop $1359.00
83507 Vista-S12 w/Adobe Photoshop $596.74

Visioneer

77102 PaperPort Strobe f/Mac $329.98
78931 Visioneer PaperPort VX w/SCSI Cable $275.84

Input

Adesso

91854 Adesso Soft Touch Keyboard $44.09
90766 Tru-Form Extended Keyboard $64.32
85594 Tru-Form Extended Keyboard w/Touchpad $82.05

Apple

93374 Design Keyboard $84.49
94461 Extended Keyboard II $154.49

Calcomp

91862 Drawing Slate II 12x12" w/Pressure Pen $304.22
91869 Drawing Slate II 12x18" w/Pressure Pen $494.94
91864 Drawing Slate II 6x9" w/Pressure Pen $171.78

Gravis

89394 Advanced Gravis Fire8ird for Mac $60.57
05998 Gravis MouseStick II $40.39

Kensington

89379 Kensington Mouse 1.0 ..... $54.31
93628 Kensington Thinking Mouse AD8 ..... $63.17

Thrustmaster

95201 Thrustmaster Flight Control System $90.88
95200 Thrustmaster Weapons Control System $56.70

Wacom

90644 ArtPad II (AD8) w/Dabbler 8undle $147.63
90643 ArtPad II (AD8) w/Erasing UltraPen $133.77
90646 Artz II 12x12 (Serial) w/Erasing UltraPen $417.85
90645 Artz II 6x8 (AD8) w/Erasing UltraPen $301.72

Printers

Epson

90488 Multi-Protocol Ethernet Interface $382.02
80667 Stylus Color 600 Inkjet $299.99
80668 Stylus Color 800 ..... $449.99
87980 Stylus Color Pro XL InkJet $1499.00

Hewlett-Packard

89150 HP DeskJet 1600CM Color Printer $1925.00
86809 HP DeskJet 340CM Portable Printer $299.98
36156 HP DeskJet 870Cse InkJet Printer $499.99
88902 HP DeskWriter 600 Printer $149.99
86345 HP DeskWriter 680C InkJet Printer $289.99
82666 HP LaserJet 6MP Printer $930.02
13692 HP Tri-Chamber ColorPrint Cartridge $23.78

Surge Protection

American Power Conversion

94359 APC Back-UPS 200 ..... $88.57
99364 APC Back-UPS 400 ..... $141.11
05901 APC Back-UPS 450 ..... $172.30
11651 APC 8ack-UPS 600 ..... $238.52
94396 APC Personal Surge Arrest 7 Outlet $14.97
94395 APC Personal Surge Arrest 7 Outlet w/Phone $19.97
94393 APC Prof Surge Arrest 7 Outlet w/Phone $32.42

Mobile Accessories

Battery Technology

87494 8TI 2-Slot 8att Charger f/Int 5300/190 Batt $79.60
88751 8TI Auto Power Adapter f/PB 5300/190 Series $54.20
93648 8TI P8 100-180c Univ. Power Adapter $54.20
06641 8TI P8 140-180c Power Charger $79.60
85820 Internal 5300/190 8attery $79.60

DoubleCase

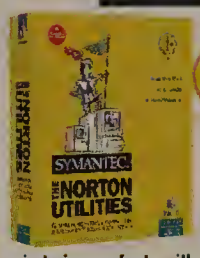
88293 ZipPac Hard Case $30.31

Targus

07720 Targus Premier Deluxe Leather Case $142.61
07454 Targus Universal Power8ook Case $59.32

Great Prices on the Complete Line of Apple Computers

SYMANTEC.™

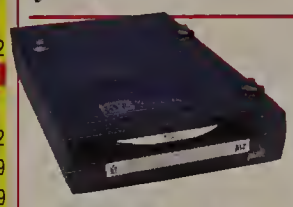


Only $98.98

Norton Utilities 3.5 Upgrade

- New version of Speed Disk is twice as fast, with new optimization profiles
- CrashGuard helps you save data in the event of a crash
- Prevents crashes so you don't have to restart every time
- Compatible with IDE and PCI drives

Symantec #04890



Zip™ Drive

iomega

- Unlimited storage on inexpensive 100MB disks
- Easy plug-and-go setup to SCSI connector
- Zip Tools software helps you track, organize and find everything

Jaz® Drive

- HUGE 1GB storage on each cartridge!
- 5.4MB/second transfer rate
- FASTER than most hard drives

As Low As $149.98

Iomega

#25659 Iomega Jaz Drive $399.98
#91825 Iomega Zip Drive $149.98

WHY PAY MORE when you can get a better price from MAC BARGAIN$?

DI$COUNT PRICE$ ON QUALITY HARDWARE, $OFTWARE & ACCE$$ORIE$

IF YOU DON'T SEE IT... CALL!

MAC BARGAIN$®

FAX: 1-425-430-3420
E-Mail Address: mac.bargains@mzi.com
707 South Grady Way, Renton, WA 98055-3233

Our Knowledgeable Sales Advisors help make buying easy!

YOUR SOURCE CODE **BW707**

©1997 MZI, Inc. Renton, WA All product names throughout this ad are trademarks ™ of their respective holders. All rights reserved.

MEGAHAUS 1-800-786-1184

• UNBEATABLE DEALS •

QUANTUM 3GB HARD DRIVE
4500rpm, 10.5ms, 3yr wty
Internal [MAC3200TMQX] $345
External [MAC3200TMQX] $405

QUANTUM 4GB WIDE
Rated fastest drive in 5/97 MacWorld
Internal [MAC4550QWI] $839
External [MAC4550QWX] $939

MICROPOLIS 4GB HARD DRIVE
SCSI Internal [MAC4100MCI] $669
SCSI External [MAC4100MCX] $739
WIDE Internal [MAC4294MCWI] $769
WIDE External [MAC4294MCWX] $889

ADAPTEC WIDE CONTROLLER
PCI controller [A2940MUW] $279

IOMEGA JAZ DRIVE
Full retail package in Iomega case.
External w/1 disk [JAZX] $459
Media any qty [JAZC1GIGMAC] $87

TORRAY 650MB PD-ROM
650MB PD & CD ROM drive in one
External w/ 1 disk [PWS650] $345

SSS CD RECORDERS
Complete kit includes External drive, Toast software & 5 free disks.
2x6 [SSS2X6CDRM5] $435
4x6 [SSS4X6CDRM5] $699

CDR74 BLANK MEDIA
Price alone / w/CDR drive
5 PACK [CDR74-5] $32 / $29
20 PACK [CDR74-20] $105 / $101
50 PACK [CDR74-50] $235 / $230
We will not be undersold on CDR media!

STOMPER CD LABEL KIT
100 labels, applicator, & template software [CDLABELKIT] $59

TOSHIBA CD ROM
12X External [XM5701XM] $209
15X External [XM3801XM] $259

Nak 8X, 4 Disc CD Changer
External [MJ48SXM] $269

4.6GB OPTICAL DRIVE
Complete kit includes 1 free disk
External [SSS4.6MAC] $1429

• SCSI HARD DRIVES •

						Int	Ext
MICROPOLIS							
4100MB	7.9ms	7200rpm	512K	MC4341	5yr	$669	$739
4550MB	7.9ms	7200rpm	512K	MC4345	5yr	$729	$799
9091MB	8.5ms	7200rpm	512K	MC3391	5yr	$1239	$1299
SCSI A/V - Drives fine tuned for audio and video applications.							
4550MB	7.9ms	7200rpm	512K	MC4345AV	5yr	$819	$889
9091MB	8.5ms	7200rpm	512K	MC3391AV	5yr	$1339	$1409
WIDE SCSI							
4294MB	8ms	7200rpm	512K	MC3243W	5yr	$769	$889
4550MB	7.9ms	7200rpm	512K	MC4345W	5yr	$789	$919
9091MB	8.5ms	7200rpm	512K	MC3391W	5yr	$1299	$1399
WIDE SCSI A/V							
4294MB	8ms	7200rpm	512K	MC3243WAV	5yr	$769	$889
4550MB	7.9ms	7200rpm	512K	MC4345WAV	5yr	$849	$979
9091MB	8.5ms	7200rpm	512K	MC3391WAV	5yr	$1399	$1499
Seagate							
1050MB	9ms	5400rpm	512K	ST31055N	5yr	$275	$345
2150MB	11ms	5400rpm	128K	ST52160N	3yr	$339	$409
2150MB	8ms	7200rpm	1024K	ST32171N	5yr	$539	$609
4350MB	8ms	7200rpm	512K	ST34371N	5yr	$859	$929
9100MB	8ms	7200rpm	512K	ST19171N	5yr	$1759	$1829
23200MB	13ms	5400rpm	512K	ST423451N	5yr	$3829	$3929
WIDE SCSI							
1050MB	9ms	5400rpm	512K	ST31055W	5yr	$359	$489
2150MB	9ms	5400rpm	512K	ST32155W	5yr	$499	$629
2150MB	8ms	7200rpm	1024K	ST32171W	5yr	$599	$729
4350MB	8ms	7200rpm	1024K	ST34371W	5yr	$909	$1039
4550MB	7.5ms	10,000rpm	512K	ST34501W	5yr	$1099	$1229
9100MB	8ms	7200rpm	1024K	ST19171W	5yr	$1699	$1829
9100MB	8ms	10,000rpm	512K	ST19101W	5yr	$3599	$3729
23200MB	13ms	5400rpm	512K	ST423451W	5yr	$3859	$4059
Quantum							
1280MB	12ms	4500rpm	128K	TM31280S	3yr	$219	$289
2110MB	10.5ms	4500rpm	128K	TM32110S	3yr	$295	$360
2151MB	10ms	5400rpm	128K	FB32160S	3yr	$328	$388
3228MB	10ms	5400rpm	128K	FB33240S	3yr	$379	$439
3254MB	10.5ms	4500rpm	128K	TM33200S	3yr	$345	$405
4310MB	10ms	5400rpm	128K	FB34320S	3yr	$459	$519
4550MB	8ms	7200rpm	512K	XP34550S	5yr	$809	$879
6448MB	10ms	5400rpm	128K	FB36480S	3yr	$574	$634
9100MB	8ms	7200rpm	512K	XP39100S	5yr	$1295	$1365
WIDE SCSI							
4550MB	8ms	7200rpm	512K	XP34550W	5yr	$839	$939
9100MB	8ms	7200rpm	512K	XP39100W	5yr	$1339	$1469
FUJITSU	**2.5GB IDE DRIVE ONLY $229**						
4400MB	8ms	7200rpm	512K	M2954S	5yr	$739	$809
9100MB	8ms	7200rpm	512K	M2949S	5yr	$1270	$1340
WIDE SCSI							
4400MB	8ms	7200rpm	512K	M2954W	5yr	$749	$879
9100MB	8ms	7200rpm	512K	M2949W	5yr	$1299	$1429

We stock a complete line of IDE drives including Toshiba 2.5" IDE Hard Drives!

• REMOVABLES •

	EXTERNAL (Call for Int. or bare price)
IOMEGA *Call about Iomega rebate*	
100MB ZIP w/1 FREE DISK!	$148 [ZIP100]
1GB JAZ w/1 FREE DISK!	$459 [JAZX]
SYQUEST	
1.5GB Syjet, 1 Free disk	$479 [SYJET1.5MAC]
NOMAI *Call about Nomai rebate*	
540MB MCD, SyQuest 270MB compatible, 1 Free disk	$295 [MCD540MACX]

• OPTICALS •

MITSUBISHI	
230MB, 128MB compatible, 1 Free disk	$369 [SSS230M]
FUJITSU	
640MB, 128 & 230MB compatible, 2MB buffer, 1 Free disk	$489 [MAC2513A2XC]
MAXOPTIX	
2.6GB, 650MB & 1.3GB compatible, 3000rpm, 1MB, 1 Free disk	$1629 [MACTAH2.6]
HEWLETT PACKARD	
2.6GB, 650MB & 1.3GB compatible, 3000rpm, 1MB, 1 Free disk	$2169 [MAC2.6HP]

• CD ROM DRIVES •

Toshiba	12X	115ms	256K	Tray	$209 [XM5701XM]
Plextor	12X	105ms	512K	Tray	$305 [PX12TSXM]
Plextor	12X	105ms	512K	Caddy	$355 [PX12CSXM]
Toshiba	15X	99ms	256K	Tray	$259 [XM3801XM]
NEC	16X	100ms	256K	Tray	$249 [CDR1610XM]

• CD RECORDERS •

SMART STORAGE SOLUTIONS
2x6, 1MB buffer, caddy loading, 5 free disks $435 [SSS2X6CDRM5]
4x6, 512K buffer, caddy loading, 5 free disks $699 [SSS4X6CDRM5]
These CD Recorders include Toast CD Mastering software. Priced as External for Macintosh. Call for internal configuration or bare drive pricing.

• CD RE-WRITABLE •

RICOH
NEW! 2X6 CD Re-Writable w/1 RW disk, & Toast $599 [RO6200SXM]
Now you can Re-write your own CDs with direct overwrite.
2X Write 6X Read Packet write supported.
CDR/W media alone/with drive 5 pack $145/$135 [CDR74W-5] 20 pack $525/$515 [CDR74W-20]

• SCSI TAPE BACKUP •

These tape drives include backup software and 1 FREE TAPE!

HEWLETT PACKARD	
2GB, 4mm, DAT, 12MB/min	$659 [C1534XM]
2-4GB, 4mm, DDS DAT, 42MB/min	$725 [C1536XM]
4-8GB, 4mm, DDS-2 DAT, 60MB/min	$999 [C1599XM]
12-24GB, 4mm, DDS-3 DAT, 120MB/min	$1429 [C1554XM]
24-48GB, 4mm, DDS-2 DAT, 6 tape loader, 88MB/min	$2499 [C1553XM]
SEAGATE	
2-4GB, 4mm, DDS DAT, 48MB/min	$729 [C4324XM]
4GB, TR4 minicartridge, 30MB/min	$455 [TST8000XM]
4-8GB, 4mm, DDS-2 DAT, 48MB/min	$849 [C4326XM]
48-96GB, 4mm, DDS-2 DAT, 12 tape loader, 48MB/min	$2119 [C4586XM]
EXABYTE	
3.5-7GB, 8mm, DAT, 32MB/min	$1375 [EXB8205XM]
7-14GB, 8mm, DAT, 60MB/min	$799 [EXB8700LTXM]
7-14GB, 8mm, DAT, 120MB/min	$1689 [ELIANTXM]
20-40GB, 8mm, AME, 360MB/min	$4409 [EXB8900XM]
70-140GB, 8mm, DAT, 10 tape loader, 60MB/min	$4359 [EXB10HXM]
SONY	
4-8GB, 4mm, DDS-2 DAT, 44MB/min	$895 [SDT5000XM]
4-8GB, 4mm, DDS-2 DAT,90MB/min	$950 [SDT7000XM]
12-24GB, 4mm, DDS-3 DAT,144MB/min	$1225 [SDT9000XM]
32-64GB, 4mm, DDS-2 DAT, 8 tape loader. 90MB/min	$2199 [TSL7000XM]

• MEDIA SALE •

1GB JAZ $87 [JAZC1GIGMAC]
540MB Nomai $55 [MCD540-MAC]
230MB Optical $10 [TJ230]
640MB 3.5" Optical $32 [TJ640]
2.6GB Optical $50 [TJ2.6]
4.6GB Optical $159 [OMDR4.6]
4mm120M tape $20 [DAT120M]
DLT 10-20GB $40 [DLT2]
DLT 20-40GB $99 [DLT4]

Nomai Syquest compatible
44MB $29 88MB $31 135MB $22
200MB $50 230MB $27 270MB $41

Toray 650MB PD Disks [PD650A]
features a padded case $39

Fuji 10 pack ZIP media [ZIP100C10M]
$135 less $20 rebate = $11.5 per disk

Fuji 2 pack 8mm/160m [DAT8MM160M2]
$39 less $5 rebate = $17 per tape

Since 1987 The Drive Authority
MEGAHAUS

DISCOVER MasterCard VISA

Sales lines open: M-F 8-8 Sat 9-3 CST
http://www.megahaus.com

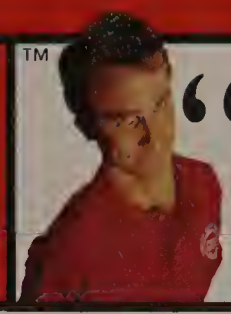
2201 Pine Drive, Dickinson, Texas 77539
(281)534-3919 FAX (281)534-6580

Prices & specifications subject to change without notice. Shipping charges are nonrefundable. Returns must be in new condition and in original packaging. Defaced items may not be returnable. No refunds on software or special orders (items not listed in ad.) All refunds subject to 15% restocking fee. All trademarks are registered trademarks of their respective companies. Personal checks held for clearance. We reserve the right to refuse any sale for any reason. Bundle price good only if sold at ad price. ©1997 MegaHaus Inc.

Circle 245 on reader service card

COMPUTER DISCOUNT WAREHOUSE

The right price.
The right advice.



"Get more"™

SYMANTEC.™

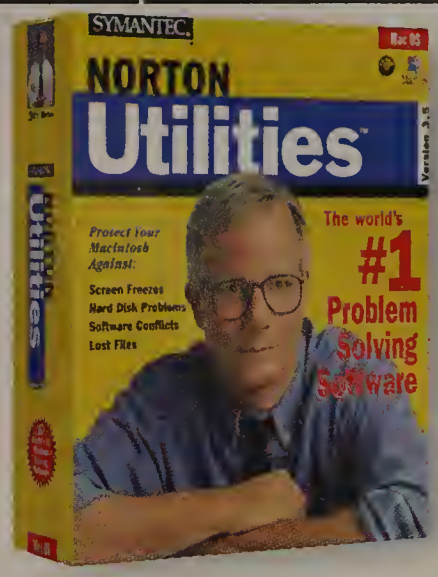
Norton Utilities V3.5

NEW!

The experts' choice to solve today's Macintosh problems

Norton Utilities is the experts' choice to solve today's Macintosh problems. Protect yourself against screen freezes, operating system problems, software conflicts, lost files and more. Norton Utilities helps you recover from disaster and prevents it from reoccurring. In the event of a crash, save your work, repair your disk and recover your files with Norton CrashGuard, Norton Disk Doctor and Norton UnErase. Get faster access to files with Speed Disk. Norton Utilities is ideal for large files and external drives, and makes multimedia run faster and more reliably. Find out what 15 million users already know—you can trust Norton Utilities.

▲ Protects against screen freezes, OS problems, software conflicts and lost files ▲ Finds and repairs disk problems ▲ Defragments hard drives ▲ Ideal for large files and external drives



**$50 mail-in manufacturer rebate for previous users of Symantec Norton Utilities for Macintosh. Offer valid through 10/31/97.*

$96.15 CDW 88335

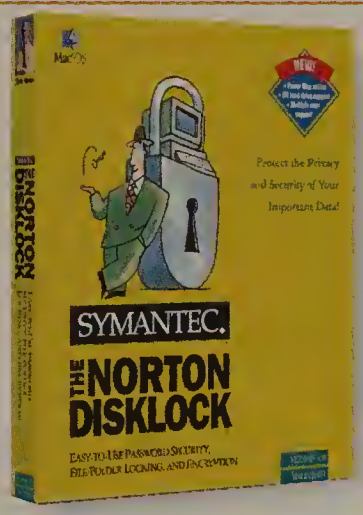
Norton Disklock V4.0

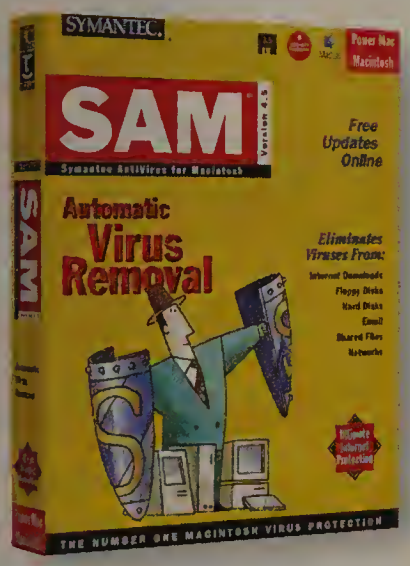
Easy-to-use password security, file locking and encryption for Macintosh

If you ever leave your computer unattended, share it with others, use a laptop or work on a network, you need Norton DiskLock. Norton DiskLock is a complete and flexible security solution. You can easily lock in privacy and security for files you want to leave open. Norton DiskLock is as easy to set up as clicking on a few buttons—yet it's virtually impossible to defeat.

$72.40 CDW 64036

MACWORLD MW ★★★★ November 1996





SAM V4.5

Maximum Internet virus protection

SAM is maximum Macintosh virus protection, keeping your files safe from viruses hidden in Internet downloads, compressed files, shared files and e-mail attachments. SAM's new SafeZone acts as a virtual clean room so copies or downloaded files can be scanned in isolation before you use them. SAM hunts down viruses before they damage your files. It keeps your protection up to date—just click on Auto Update to download the latest definition files free. SAM also repairs infected files so you can open and work with them safely. Everything is automatic, so you can focus on what you want to do.

▲ SafeZone Internet protection automatically protects the desktop, or any folder, from infection from downloaded files

▲ Scan on open or shared documents—allows scanning of MS Word and Excel files shared via File Sharing on open

▲ Expanded modem compatibility—easier to update virus definitions with Auto Update

▲ MS Office Installer support

▲ Improved ease of customization

▲ Improved alerting—longer custom alert messages

MacUser ★★★★★ April 1997

MACWORLD MW ★★★ February 1997

$64.17 CDW 75075

CDW® sells for less and services you better!™

800-509-4239

MACWORLD Macworld 7/97 ©CDW Computer Center, Inc • 1020 E. Lake Cook Road, Buffalo Grove, IL 60089-7193

www.cdw.com

COMPUTER DISCOUNT WAREHOUSE™

COMPUTER DISCOUNT WAREHOUSE

The right price.
The right advice.

We offer you

"Get more than just a great price. Call today and get a little empathy, some free advice and a free CDW catalog."

MOTOROLA

Monitor sold seperately

$2250.00
CDW 86849

StarMax™
3000/240 mini-tower
High performance, aggressive price

✦ 240MHz PowerPC 603e processor ✦ 512KB Level 2 cache ✦ 32MB RAM standard ✦ 2.5GB hard drive ✦ 8X CD-ROM drive ✦ 28.8K bps modem ✦SOHO software bundle

ViewSonic®

E655
Quality that is truly affordable

■ 15" flat square screen CRT (13.8" viewable image size) ■ Anti-glare and anti-static screen coating ■ 0.28mm dot pitch ■ Maximum resolution: 1280 x 1024 ■ 3-year limited warranty on CRT, parts, and labor

$318.48 CDW 79415

Hardware, Software & Peripherals at DISCOUNT Prices!

COMPUTERS

MOTOROLA

StarMax Series Desktops
3000/180MHz PowerPC 603e
16MB 1.2GB 8X CD 1249.00
3000/200MHz PowerPC 603e
16MB 1.2GB 8X CD 1495.00
StarMax Series Mini-towers
3000/180MHz PowerPC 603e
32MB 2.5GB 8X CD 1395.00
3000/200MHz PowerPC 603e
32MB 2.5GB 8X CD 1795.00
3000/200MHz PowerPC 603e
32MB 2.5GB 16X CD 2149.00
3000/240MHz PowerPC 603e
32MB 2.5GB 8X CD 2250.00
3000/240MHz PowerPC 603e
32MB 2.5GB 16X CD 2549.00
4000/160MHz PowerPC 604e
32MB 2.5GB 8X CD 1895.00
4000/200MHz PowerPC 604e
32MB 2.5GB 8X CD 2895.00
4000/200MHz PowerPC 604e
32MB 4.3GB 16X CD 3099.00

UMAX Computer Corporation

SuperMac Series Desktops
C500 180MHz PowerPC 603e
16MB 1.2GB 8X CD 1349.00
J700 180MHz PowerPC 604e
24MB 2.1GB 8X CD 2499.00
SuperMac Series Mini-towers
C600 180MHz PowerPC 603e
16MB 1.2GB 8X CD 1499.00
C600 200MHz PowerPC 603e
16MB 2.1GB 8X CD 1799.00
C600 240MHz PowerPC 603e
24MB 2.1GB 8X CD 1995.00
S900L 180MHz PowerPC 604e
32MB 2.1GB 8X CD 3199.00
S900L 2x180MHz PowerPC 604e
32MB 2.1GB 8X CD 3899.00
S900L 200MHz PowerPC 604e
32MB 2.1GB 8X CD 3399.00
S900L 2x200MHz PowerPC 604e
32MB 2.1GB 8X CD 4499.00
S900L 225MHz PowerPC 604e
32MB 2.1GB 8X CD 3899.00
S900L 233MHz PowerPC 604e
32MB 2.1GB 8X CD 4199.00
S900L 250MHz PowerPC 604e
32MB 2.1GB 8X CD, internal Iomega Zip drive . 4899.00

MONITORS

HITACHI
SuperScan Mc 611 17" 0.26mm 748.99
SuperScan Mc 801 21" 0.26mm 1659.20

MAC
DX700T 17" 0.25mm 668.51
DJ702E 17" 0.28mm 589.26
DJ920 21" 0.28mm 1507.01

MAGNAVOX
MB5314 15" 0.28mm 339.37
MB7000 17" 0.28mm 539.91

NEC
M500 15" 0.25mm w/speakers 375.29
XV15+ 15" 0.25mm 375.29
XV17+ 17" 0.25mm 699.16
P750 17" 0.25mm 879.78
E1100 21" 0.28mm 1589.43

100sx 15" 0.25mm 356.36
100sf 15" 0.25mm 394.36
200sx 17" 0.25mm 648.28
200sf 17" 0.25mm 784.77
17se2t 17" 0.25mm 859.52
300sf2t 20" 0.30mm 1565.46
GDM-W900 24" 0.25mm 4444.33

ViewSonic®
E641 14" 0.28mm 226.08
E655 15" 0.28mm 318.48
Q53 15" 0.28mm 265.26
17GS 17" 0.27mm 576.35
17GA 17" 0.27mm 616.18

MONITORS

ViewSonic®
GT770 17" 0.25mm 649.07
PT770 17" 0.25mm 718.58
PT775 17" 0.25mm 819.54
GT800 20" 0.30mm 1149.26
G810 21" 0.25mm 1385.73
P810 21" 0.25mm 1469.10
PT813 21" 0.28mm 1629.56
P815 21" 0.25mm 1584.94

VIDEO BOARDS

ATI
Xclaim TV external TV tuner 83.44
Xclaim 3D 4MB PCI 185.66
Xclaim 3D 8MB PCI 229.87
Xclaim VR 2MB PCI 219.56
Xclaim VR 4MB PCI 245.39

INTEGRATED MICRO SOLUTIONS
Turbo TV video capture 129.13
Twin Turbo 128M2 2MB PCI 239.54
Twin Turbo 128M4 4MB PCI 399.52
Twin Turbo 128M8 8MB PCI 646.71

radius
Thunder 30/1600 ..... 694.54
ThunderColor 30/1152 ..... 1585.73
ThunderColor 30/1600 ..... 1986.26
ThunderPower 30/1920 ..... 1205.13

COMMUNICATIONS

DIAMOND
SupraExpress 56K external 169.97
SupraExpress 56K speakerphone 179.34
Supra 33.6 faxmodem external 159.94
SupraSonic 33.6 external 184.51

GLOBAL VILLAGE
TelePort 56K 56Flex external 207.57
TelePort 56K X2 external 207.57
TelePort Internet Edition 33.6 ..... 147.00
TelePort Speakerphone Edition 33.6 ... 246.42

Hayes
ACCURA 336 external 137.61
QPTIMA 336 external 244.85
ACCURA 56K external 169.97

MOTOROLA
Montana 33.6 PC Card 189.23
BitSURFR Pro ISDN 346.06

PRACTICAL PERIPHERALS
MacClass 336 V.34 MiniTower II 109.80
MacClass 33.6 PC Card 149.35

U.S. Robotics
Megahertz 28.8 cell-capable CruiseCard 229.00
Megahertz 33.6 Ethernet 10BT PC Card w/RJ11 . 299.10
Megahertz AllPoints wireless PC Card .. 464.12
Sportster 28.8 PC Card w/DataView 189.12
Sportster 33.6 external 169.29
Sportster Voice 33.6 external 189.68
Sportster 56K x2 faxmodem external ... 219.99
Courier V.Everything 33.6 external 239.57
Courier I-modem 339.86

DATA STORAGE

Hi-Val
Hi-Val 8X4 CD-changer external 239.78
Hi-Val 8X4 CD-changer w/software external .. 275.33
Hi-Val SounTastic 12X CD external 239.78
Hi-Val SounTastic 12X CD Kit w/software .. 259.82

iomega
Zip drive 100MB SCSI external 149.95
100MB Zip disk 19.95
100MB Zip disk 3-pack 49.95
Jaz Drive 1GB SCSI-2 external 399.95
1GB Jaz disk 124.95
1GB Jaz disk 3-pack 299.95
Jaz Jet PCI SCSI interface for Power Mac .. 99.95

DATA STORAGE

LACIE LIMITED
Fireball TM 1.2GB Ultra SCSI-3 internal ... 299.00
Fireball TM 1.2GB Ultra SCSI-3 external .. 369.00
Fireball TM 2.1GB Ultra SCSI-3 external .. 449.00
Atlas II 4.3GB Wide Ultra SCSI-3 internal .. 899.00
Atlas II 4.3GB Wide Ultra SCSI-3 external .. 999.00
8X CD-ROM drive external 199.00
8X 4-CD changer external 299.00

Quantum
Fireball 2.1GB Ultra SCSI-3 ..... 319.61
Fireball 3.2GB Ultra SCSI-3 ..... 374.48
Atlas II 4.5GB Ultra SCSI-3 ..... 859.50

SyQuest
EZFlyer 230MB external 238.47
EZFlyer 230MB cartridge 29.32
SyJet 1.5GB SCSI internal 399.00
SyJet 1.5GB SCSI external 499.00
SyJet 1.5GB cartridge 107.77

MEDIA

3M 63 minute (550MB) CD-recordable 6.97
3M 74 minute (650MB) CD-recordable 6.94
3M Travan TR-1 400MB 26.23
3M Travan TR-2 800MB 29.76
3M Travan TR-3 1.6GB 29.56
3M Travan TR-4 4GB 33.71
Fuji 100MB Zip Disk 19.00
Sony 100MB Zip disk 14.47
SyQuest 88MB cartridge 44.43
SyQuest 200MB cartridge 62.65
SyQuest 270MB cartridge 49.56

INPUT DEVICES

AGFA
ePhoto 307 digital camera 474.30
SnapScan flatbed scanner 294.18
StudioScan IIsi flatbed scanner 619.28
StudioStar flatbed scanner 799.24
Arcus II flatbed scanner 1995.00

ALPS
Portable GlidePoint 41.26
Desktop GlidePoint 69.84
GlidePoint Keypad 109.30
GlidePoint Keyboard 105.88

ADESSO
PowerMouse 19.33
Soft Touch Plus extended keyboard 47.05
NU-Form extended keyboard 49.46
NU-Form extended keyboard w/touchpad . 76.52
Tru-Form extended keyboard 67.10
Tru-Form extended keyboard w/pointer .. 71.81
Tru-Form Touch Pad 85.93

CALCOMP
UltraSlate 4 x 5 ..... 129.56
UltraSlate 6 x 9 with Live Pix SE 259.63
UltraSlate 6 x 9 with Live Pix SE/Painter . 519.72

CONNECTIX
QuickCam digital video camera 97.94
Color QuickCam digital video camera ... 224.59

EPSON®
PhotoPC digital camera 399.00
PhotoPC 500 digital camera 499.00
Action Scanning System II 317.94
ES-1000C color flatbed scanner 569.37
Expression 636 Executive scanner 799.00
Expression 636 Artist scanner 999.00
Expression 636 Professional scanner .. 1399.00

HEWLETT® PACKARD
HP ScanJet 4c flatbed scanner 429.35
HP ScanJet 5p flatbed scanner 749.57

Kodak digital science SOLUTIONS
DC20 24-bit digital camera 199.00
DC25 24-bit digital camera 499.00
DC50 24-bit digital camera w/Zoom lens .. 699.00

INPUT DEVICES

LOGITECH
Cordless Mouse Man 62.62
TrackMan Marble 83.23
TrackMan Live! 119.74

MICROTEK
ScanMaker E3 ..... 189.57
ScanMaker E6 Standard 329.22
ScanMaker E6 Professional 519.99
ScanMaker 35t Plus 729.22

Nikon
Coolpix 100 digital camera 506.47
AX-110 Scantouch flatbed scanner 289.74
AX-210 ScanTouch flatbed scanner 584.10
LS-20 Super CoolScan II 1154.02
Super CoolScan film scanner 1729.44

Polaroid
PDC 2000/40 digital camera 2877.79
SprintScan 35LE film scanner 779.41
SprintScan 35ES film scanner 1444.53
SprintScan 35+ film scanner 1774.59

UMAX Computer Corporation
Astra 600S flatbed scanner 235.35
Vista-S12 with PhotoDeluxe 439.35
Vista-S12 with Photoshop LE 498.91
Vista-S12 with full Photoshop 629.61
PowerLook II 1395.00

VISIONEER
PaperPort vx 277.21

WACOM
ArtPad II 4 x 5 graphics tablet 139.95
ArtPad II 6 x 8 graphics tablet 289.00
ArtPad II 12 x 12 graphics tablet 419.00

PRINTERS

ALPS
MD-2010 color 399.00
MD-4000 color printer/scanner 599.00

EPSON®
Stylus Color 600 printer 299.00
Stylus Color 800 printer 449.00
Stylus 1500 ..... 799.00
Stylus Pro XL 1499.00

HEWLETT® PACKARD
HP DeskJet 340 portable ink jet printer .. 269.37
HP DeskJet 1600CM printer 1956.72
HP DeskJet 870Cxi printer 489.39
HP DeskWriter 680C printer 285.76
HP LaserJet 6MP printer 878.45

CARRYING CASES

TARGUS
Notepac Case 39.00
Notepac Plus Case 59.99
Universal Notebook Case 69.00
Leather Notebook Case 99.00
Deluxe Universal Case 129.99
Notebook Catalog Carrying Case 149.95
Shuttle Luggage Case 199.00

UPS SYSTEMS

APC AMERICAN POWER CONVERSION
PowerChute software for Novell NetWare . 57.93
Back-UPS Office 199.95
Back-UPS 200 ..... 89.32
Back-UPS 400 ..... 144.03
Back-UPS 600 ..... 237.76
Smart-UPS 450NET 299.41
Smart-UPS 700NET 379.27
Smart-UPS 1000NET 528.29
Smart-UPS 1400NET 669.21
SurgeArrest P7 Home 8.45
SurgeArrest Personal 16.25
SurgeArrest Pro 26.31
SurgeArrest Network 29.45

800-509-4239

$2.99 UPS ground shipping on all orders of $200 or less!

www.cdw.com MW3058B Macworld 7/97 1020 E. Lake Cook Road, Buffalo Grove, IL 60089-7193

a rare sales tool.
it's called objectivity.

COMPUTER DISCOUNT WAREHOUSE™

APC
AMERICAN POWER CONVERSION

$30 rebate!*

Back-UPS Office

Multi-outlet AC surge protection for peripherals

● RJ-11 protection for Internet and remote users ● 10BASE-T network data line protection for corporate workstations ● Battery backup for the CPU, monitor and one additional critical device ● $25,000 Lifetime Equipment Protection policy ● 2-year warranty

$199.95 - $30 rebate* = **$169.95*** CDW 70806

*After $30 mail-in manufacturer rebate. Offer valid through 10/31/97

EPSON®

$270 price drop!*

Expression 636 Artist flatbed scanner

MacUser AWARDS Editors' Choice 1996 Finalist — Best New Scanner

MacUser March 1997

Impressive image quality for any job

■ Resolution: 600 dpi optical, 4800 dpi interpolated ■ OCR support: Auto Area Segmentation (AAS), Text Enhancement Technology (TET) ■ Software: Adobe® Photoshop™ (full version), Metatools' Kai's Power Tools SE™, Claris HomePage™, Paper Document Management and Archival Suite™, NewSoft Presto!, PageManager LE™ and Epson scanning utilities ■ Includes SCSI cable ■ 2-year limited warranty with registration card

$999.00 CDW 75906

*Off our last catalog price.

U.S. Robotics
The Intelligent Choice in Information Access

NEW!

Sportster 56K Faxmodem for Macintosh

Now with 56K bps x2 Technology

✦ **Includes:** Sportster 56K Faxmodem (capable of 56K bps downloads; however, current regulations limit download speed to 53K bps), RJ-11 phone cord, AC adapter, cable, U.S. Robotics Connections™ CD-ROM with fax and communication software, Internet access software and more than 30 software programs and special offers

$219.99 CDW 81425

Internet connectivity requires access services from an Internet access provider. Contact your local access provider(s) for rates, terms and conditions.

CDW® carries over 20,000 products! If you don't see it, Call!

SOFTWARE

Adobe

Acrobat V3.0 CD 179.41
After Effects V3.1 CD 606.15
Illustrator V6.0 (3.5" + CD) 359.18
Illustrator V6.0 upg 3.X to 6.0 (3.5" + CD) 114.98
Illustrator V6.0 upg 3.X to 6.0 (CD only) 89.96
Illustrator V6.0 upg 5.X to 6.0 (3.5" + CD) 114.98
Illustrator V6.0 upg 5.X to 6.0 (CD only) 89.96
PageMaker V6.0 (3.5" + CD) 545.78
PageMaker V6.0 upg 129.81
PageMaker V6.5 CD 545.78
PageMaker V6.5 comp upg CD 114.98
PageMaker V6.5 vers upg CD 89.96
PageMill V2.0 CD 93.07
PageMill V2.0 version upg CD 46.89
Persuasion V4.0 CD 239.21
Persuasion V4.0 upg CD 114.98
PhotoDeluxe CD 49.34
Photoshop V4.0 CD 545.78
Photoshop V4.0 vers upg CD 129.80
Premiere V4.2 CD 499.26
Premiere V4.2 upg CD 129.80
Streamline V3.1 ..... 119.93
Type Manager Deluxe V4.0 CD 47.81
Type Reunion Deluxe V2.0 ..... 32.38

Apple

Apple At Ease V3.0 ..... 29.42
Apple Internet Connection Kit V1.1 CD 43.65
Apple Mac OS 7.6 w/Internet Connection Kit 118.22
Apple Mac OS 7.6 w/Internet Connection Kit CD 95.67
Apple Mac System 7.5.3 CD 93.15
Apple Remote Access Client V2.1 ..... 49.36
Apple Remote Access Personal Server V2.1 ..... 91.43

CAERE

OmniForm V2.0 ..... 129.37
OmniPage Direct V2.0 ..... 57.70
OmniPage Pro V6.0 ..... 459.02
OmniPage Pro V6.0 upg 114.75
OmniPage Pro V7.0 CD 478.42
OmniPage Pro V7.0 upg CD 114.36

C&G

Conflict Catcher V4.0 ..... 59.07
Let's Keep It Simple Spreadsheet 109.62

CLARIS

ClarisDraw V1.0 ..... 179.59
ClarisImpact V2.0 ..... 79.79
ClarisOrganizer V1.0v2 w/CLICKBQQK 44.85
ClarisWorks V4.0 CPU bundle 63.61
ClarisWorks V4.0 vers/comp upg 62.47
ClarisWorks V4.0 w/Internet 115.08
Emailer V1.1 ..... 41.56
Emailer V2.0 ..... 44.85
FileMaker Pro V3.0 ..... 176.08
FileMaker Pro V3.0 server 887.37
FileMaker Pro V3.0 server upg 274.83
FileMaker Pro V3.0 upg 89.75
Home Office 26.62
Home Page V1.0 ..... 73.83
Home Page V2.0 CD 87.08
OfficeMail V1.0 ..... 255.51

Connectix

QuickCards V1.1 CD 31.77
RAM Doubler 2 ..... 55.68
Speed Doubler 2 ..... 55.80
VideoPhone (software only) 55.68

COREL

Corel Gallery V1.0 CD 21.09
Corel Gallery V2.0 CD 37.27
Corel Mega Gallery CD 62.47
Corel Print House CD 29.06
Corel Stock Photo Library 1 CD 859.21
Corel Stock Photo Library 2 CD 867.22

SOFTWARE

COREL

Corel Stock Photo Library 3 CD 879.07
Corel Super Ten Animals CD 37.77
Corel Super Ten Great Works of Art CD 37.32
Corel Super Ten People CD 37.20
Corel Super Ten Select Photos CD 37.13
Corel WEB.GALLERY CD 63.03
Corel WordPerfect V3.5 CD 149.64
Corel WordPerfect V3.5 upg CD 79.30
CorelDRAW 6 Suite CD 359.18
CorelDRAW 6 Suite upg CD 129.38

DANTZ

Retrospect Remote V3.0 ..... 135.53

DATAVIZ

Web Buddy V1.0 ..... 47.13

DATAWATCH

Virex V5.6 ..... 59.19

DENEBA

Canvas V5.0 3.5 + CD 379.83
Canvas V5.0 comp upg 138.15

EDUTAINMENT

Activision Mechwarrior 2 ..... 46.35
Berkeley You Don't Know Jack CD 13.79
Broderbund MYST CD 37.13
Bungie Marathon 2: Durandal 42.46
Bungia Marathon CD 28.39
Casady & Greene Amoebarena CD 35.42
Casady & Greene Zone Warrior CD 35.42
Davidson The Perfect Resume 34.57
Davidson WarCraft Orcs & Humans CD 31.37
Interplay Descent II CD 49.34
Interplay Virtual Pool CD 42.10
Lucas Arts The Dig CD 26.90
Maxis SimCity 2000 ..... 33.53
Maxis SimCity 2000 Special Edition CD 39.18
Maxis SimCity Classic 25.55
Virgin Flight Unlimited CD 35.64

EQUILIBRIUM

DeBabelizer Lite V1.1 ..... 64.06
DeBabelizer Toolbox 1-user 229.06
DeBabelizer Toolbox 5-user 919.55

EXTENSIS

Cyberpress V1.0 ..... 129.37

FRACTAL DESIGN CORPORATION

Dabbler V2.0 CD 42.40
Detailer CD 274.33
Expression CD 269.05
Painter V4.0 ..... 314.39
Painter V4.0 upg 117.90
Poser V2.0 CD 119.02
Poser V2.0 upg CD 62.28
Ray Dream Designer V4.1 ..... 89.45
Ray Dream Studio V4.1 CD 268.50

FWB

CD-ROM ToolKit V2.0 ..... 49.93
Hard Disk ToolKit V2.01 ..... 49.36

GRAPH

Soft Blueprint V5.0 ..... 189.31
Soft MiniCAD V6.0 ..... 514.73

SOFTWARE

INSIGNIA SOLUTIONS

MacTransfer for Windows 95 PCs 45.09
SoftWindows 95 V4.0 CD 319.13
SoftWindows for Performa 109.52
SoftWindows V3.0 CD 285.50
SoftWindows V3.0 CD w/CPU purchase 179.47

Intuit

MacInTax 1996 ..... 41.86
MacInTax Deluxa 1996 CD 49.90
QuickBooks Pro V4.0 ..... 179.41
QuickBooks V4.0 ..... 109.91
Quicken Deluxe V7.0 CD 59.07
Quicken V7.0 ..... 41.50

macromedia

Authorware Interactive Studio 1919.45
Director 5 CD 817.67
Director 5 upg CD 364.02
Director 6 upg CD 379.88
Director Multimedia Studio 2 CD 889.46
Director Multimedia Studio 2 upg CD 458.13
Director Multimedia Studio 6 CD 929.20
Director Multimedia Studio 6 upg CD 478.48
Extreme 3D CD 439.49
Extreme 3D comp upg CD 179.69
Fontographer V4.1 CD 309.82
FreeHand 7 CD 377.99
FreeHand 7 comp upg CD 137.81
FreeHand 7 upg CD 138.08
FreeHand Graphics Studio 7 CD 399.84
FreeHand Graphics Studio 7 comp upg CD 179.64
FreeHand Graphics Studio 7 upg CD 179.47
Home Page/Sound Edit bundle CD 147.07
Macromedia Extreme 3D V2.0 CD 379.05
SoundEdit 16 V2.0 CD 259.45
SoundEdit 16 V2.0 plus DECK II CD 339.38
xRes 3 CD 378.90
xRes 3 comp upg CD 185.14

MetaTools

Bryce 2 CD 179.00
Kai's Power Goo CD 49.95
Kai's Power Tools 3 CD 129.00
Metatools Bryce 2 Accessory Kit CD 47.95
Power Photos I CD 129.00
Power Photos II CD 129.00
Power Photos III CD 129.00
Power Photos IV CD 129.00
Vector Effects V1.0 ..... 129.00

METROWERKS

CodeManager 3 ..... 319.28
CodeWarrior Gold 11 CD 319.43
Discover Programming for Macintosh V2.0 ..... 63.32
Discover Programming with Java V2.0 ..... 65.53
Metrowerks CodeManager V4.0 CD 326.04

Microsoft

Arcade V1.0 ..... 29.30
Cinemania 97 CD 29.58
Encarta Deluxe 97 CD 67.24
Excel V5.0 ..... 298.44
Excel V5.0 upg 115.58
Flight Simulator V4.0 ..... 44.65
Office V4.2.1 Small Business CD 455.58
Office V4.2.1 Small Business upg CD 269.39
PowerPoint V4.0 ..... 295.44
PowerPoint V4.0 upg 114.98
Project V4.0 ..... 419.73
Project V4.0 upg 135.37
Visual FoxPro V3.0 CD 439.61
Visual FoxPro V3.0 upg CD 265.72
Word V6.0.1 ..... 298.44
Word V6.0.1 vers upg 115.55
Works V4.0 ..... 45.46

SOFTWARE

Now Software

Startup Manager V7.0 ..... 47.66
Up-to-Date Web Publisher V1.0 CD 114.53
Utilities V6.5 CD 76.10

ProCD

Select Phone Deluxe 97 CD 62.47
Select Phone 97 CD 44.74

QUALCOMM

Eudora Pro V3.0 ..... 55.63
Eudora Pro V3.0 5-user 209.23
Eudora Pro V3.0 upg 34.94

QUARK

QuarkImmedia V1.0 CD 669.64
QuarkXPress V3.32 CD 659.05

SPECULAR

3D Web Workshop 128.51
Infini-D Studio V3.5 ..... 489.05
Infini-D V3.5 CD 369.70

STRATA

Media Paint V1.1 ..... 399.97
Studio Pro V1.75 ..... 849.37
Vision 3D V4.0 ..... 59.18

SYMANTEC.

ACT! V1.0 for Newton 89.21
ACT! V2.5 ..... 145.95
ACT! V2.5 upg 47.79
Norton Disklock V4.0 ..... 72.40
Norton Utilities V3.2 ..... 94.27
Norton Utilities V3.2 upg 38.23
SAM AntiVirus V4.5 ..... 64.17
Suitcase V3.0 ..... 63.61
Symantec Cafe 64.88

VIRTUS

3D Website Builder V1.0 CD 85.31

XEROX

Textbridge Pro V3.0 ..... 239.68
Textbridge V3.0 ..... 66.55

CDW® TELEPHONE HOURS

Sales
Monday-Friday 7 a.m.-9 p.m. CT • Saturday 9 a.m.-5 p.m. CT
Tech Support for Customers
Monday-Friday 9 a.m.-9 p.m. CT • Saturday 9 a.m.-5 p.m. CT

BUY WITH CONFIDENCE
CDW® IS A NASDAQ TRADED COMPANY
TICKER SYMBOL CDWC D & B rated SA1 Duns 10-762-79S2

Credit card charges are not submitted until time of shipment. For your protection, we ship only to your credit card's verified billing address. Freight is calculated as the carrier's actual freight charge plus insurance and packaging material. The cost of insurance is 0.35% (0.0035) of the order total. Packaging materials will not exceed $4.00 for single package shipments or $6.00 for multi-package shipments. Before returning any product, you must obtain an RMA number. Non-defective returns are subject to a restocking fee. Software, chips and other electronic components are not returnable. Allow 10 business days for shipping when paying by personal check. All pricing subject to change. For all prices, products and offers, CDW reserves the right to make adjustments due to changing market conditions, product discontinuation, manufacturer price changes, errors in advertisements or other extenuating circumstances. All trademarks and registered trademarks are the sole property of their respective owners.

If you find a better price, call CDW® before you buy! **800-509-4239**

©1997 CDW Computer Centers, Inc Macworld 7 97 MW3058C www.cdw.com

Circle 2 on reader service card

Prices Change Often, Call Us for the Lowest Street Prices Anywhere

Local 818-708-63884 or Fax us at 818-708-6399-24 Hrs.

BELL Memory

DIMMS 64BIT•168PIN

8MB	$69	#M1628
16MB	$89	#M1625
32MB	$179	#M1622
64MB	$309	#M1619

LifeTime Warranty on all Memory

SIMMS 32BIT•72PIN 60NS

8MB	$65	#M1598
16MB	$89	#M1595
32MB	$169	#M1604

Powerbook® 1400			Powerbook® 3400		
8MB	#M1310	$88	16MB	#M1430	$139
16MB	#M1314	$139	24MB	#M1859	$189
24MB	#M1316	$179	32MB	#M1432	$209
32MB	#M1318	$219	48MB	#M1861	$349
48MB	#M1319	$349	64MB	#M1437	$549
			96MB	#M1855	$849
			128MB	#M1857	$1149

DIMMS 5 Volt EDO 60ns

8MB	$89	#M1448
16MB	$139	#M1451
32MB	$225	#M1454
64MB	$409	#M1457

Newer TECHNOLOGY

Accelerate NOW!

MAXpowr with 604e Processors Designed for 7500, 7600,85, & 9500 PowerMacs

200MHz	$895	#A4418
225MHz	$1029	#A4420
360MHz (With 2 604e 180MHz Processors)	$1448	#A4422
400MHz (With 2 604e 200MHz Processors)	$1595	#A4424

NUpowr PowerBook® Accelerators

603e 183MHz	$599	#A4566
Comes with 128K L2 Cache, for the 1400 PowerBooks		
500 Series Nupowr	$669	#A4564
167 MHz Upgrade, 8MB on Board		
CardCam Video-InCard	$359	#P1036
PC Type II, Accepts either Composite or S-Video		

FWB incorporated

$349 #A4434

JackHammer Ultra Wide PCI Accelerator

SledgeHammer 8200 PCI-Ultra/W	$3199	#H1414
SledgeHammer 17400 PCI-Ultra/W/Diff	$5195	#H1418
Hammer DLT 15 Gig	$3595	#D2533

Microtek 36 Bit Color

600 x 1200dpi

Free Transparency Unit

ScanMaker III ..... $1349 #S8444

The Latest Software Titles

Microsoft Office 4.2.1	$269	#S1306
Adobe Photoshop 4.0	$329	#S1035
Adobe PageMaker 6.5	$499	#S1025
Adobe After Effects 3.1	$399	#S1055
Adobe Illustrator 6.0	$349	#S1014
MacroMedia Freehand V7	$299	#S1139

Yamaha

CD Recordable 4x6 w/Toast s/w $849 #E7307

iomega

Zip Drive & Cart.	$145	R6103
Jaz Drive 1GB & Cart.	$399	R6106

Video Editing TRUEVISION®

TARGA 2000

Bravado 1000(PCI)	$619	#V9331
Targa 2000 PRO (PCI)	$3199	#V9307
Targa 2000 (PCI)	$2899	#V9200

UMAX® Computer Corporation

MACWORLD ★★★★★ · Very Good MacWEEK · ADVANCED SCALABLE A.S.P.D. PROCESSOR DESIGN · MW EDITORS' CHOICE · MacUser ★★★★ JULY 1995

Ma

Government, Educational and Fortune 1000 Purchase Orders Welcome!

UMAX S900L - 604e TOWER COMPUTERS

250MHz	233MHz	225MHz
32MB 4GB Ultra/12xCD/8MB IMS/Zip	32MB 2.1GB/8xCD/8MB IMS Video Card	32MB 2.1GB/8xCD/8MB IMS Video Card
Price War — We will beat any CPU Price	Price War — We will beat any CPU Price	Price War — We will beat any CPU Price
List Price $4,899	List Price $4,199	List Price $3,699
after MacMarket instant Rebate	after MacMarket instant Rebate	after MacMarket instant Rebate
#A1644 $4,399	#A1648 $3,749	#A1642 $3,299

2-200MHz	200MHz	2-180MHz
32MB 2.1GB/8xCD/4MB IMS Video Card	32MB 2.1GB/8xCD/4MB IMS Video Card	32MB 2.1GB/8xCD/4MB IMS Video Card
Price War — We will beat any CPU Price	Price War — We will beat any CPU Price	Price War — We will beat any CPU Price
List Price $4,299	List Price $3,299	List Price $3,699
after MacMarket instant Rebate	after MacMarket instant Rebate	after MacMarket instant Rebate
#A1646 $3,849	#A1639 $2,949	#A1637 $3,299

FREE! Tech Support · FREE! Memory Installation · FREE! Catalog Subscription

C600 Includes $100 to $200 Instant Rebate

240MHz/603e/16MB RAM/2.1GB HD/8xCD/28.8.	#A1649	$1,799
200MHz/603e/16MB RAM/2.1GB HD/8xCD/28.8.	#A1643	$1,549
180MHz/603e/16MB RAM/1.2GB HD/8xCD/28.8.	#A1645	$1,399

C500 140MHz 16MB Ram/1.2GB Hard Drive/8xCD $999 #A1636

RasterOps®

MW EDITORS' CHOICE · MW ★★★★

SuperScan MC600 — 17" .28mm dot pitch, flat, Black matrix Invar Shadow Mask, up to 1360x1024 @60HZ, digital controls, 120/240VAC auto adjusting 50/60Hz	$599	#M6704
SuperScan MC20 — 20" .28mm dot pitch, flat, square CRT, Black matrix Invar Shadow Mask, up to 1360x1024 @76HZ, digital controls, 120/240VAC auto adjusting 50/60Hz	$1269	#M6525
SuperScan MC801 — 21" .22mm horizontal dot pitch, flat, square CRT, Black matrix Invar Shadow Mask, up to 1600x1200 @66HZ, digital controls, 120/240VAC auto adjusting 50/60Hz	$1559	#M6527
SuperScan MC801HR — 21" .28mm horizontal dot pitch, flat, Square CRT, Black matrix Invar Shadow Mask, up to 1600x1200 @76HZ, digital controls, 120/240VAC auto adjusting 50/60Hz	$1749	#M6521

SuperScan MC801HR $1749 #M6521

EPSON

#P3291

Stylus Color ProXL $1299

13"x19", 720DPI Color Printing

Stylus Color 800 — 1440 DPI Color Printing	$439	#P3483
Stylus Color 600 — 1440 DPI Color Printing	$299	#P3485

Pinnacle Micro

APEX 4.6GB M-O #E7236 $1399

Vertex 2.6GB	$1339	#E7253
CDR 4x4w/Toast	$899	#E7258

HEWLETT® PACKARD

870cxi 600dpi	$488	#P3350
6MP 600dpi	$899	#P3348
4MV 11"X17"	$2649	#P3235
1600CM color	$1799	#P3410

INTEGRATED MICRO SOLUTIONS

TwinTurbo128M

4MB VRAM	$259	#V9240
8MB VRAM	$489	#V9238

Watch TV on your PCI Mac

Turbo TV ... $139 #V9345

SupraFAXModem™

5 Yr Limited Warranty

SupraExpress 56k SP w/built in speakerphone	$179	#F8211
SupraExpress 56k V.34	$169	#F8209

SONY

Sony 100SF	$429	#M6590
Sony 200SX	$679	#M6593
Sony 200SF	$759	#M6584
Sony 300SF	$1595	#M6586

All Prices reflect a **Cash** Discount. Any other method is 2% higher. Prices are subject to change without notice. All Returns are subject to restocking fee, must be in original package, condition & needs an RMA#. No Refunds on Labor or Freight Charges. **We accept Visa, MasterCard, Discover & American Express. P.O.s are accepted from U.S. Gov't, Schools & Corporations.** Call for Details. Not responsible for typographical errors.

Check out Our Web Site at: http://www.macmarket.com

cMarket

800-905-3034 Call for Your Catalog

Fax:818-708-6399

See us at http://www.macmarket.com. Check out our Weekly Specials

Power Macintosh®

Power Macintosh® 9600/200MP
32MB 4GB/12xCD/4MB VRAM
Price War — We will beat any CPU Price
$4,359 #A1672

Power Macintosh® 9600/200MHz
32MB 4GB/12xCD/4MB VRAM
Price War — We will beat any CPU Price
$3,195 #A1671

Power Macintosh® 8600/200MHz
32MB 2GB/12xCD/Zip Drive
Price War — We will beat any CPU Price
$2,999 #A1670

Power Macintosh® 7300/200MHz
32MB 2GB/12xCD/2MB VRAM
Price War — We will beat any CPU Price
$2,299 #A1668

Power Macintosh® 7300/180MHz
16MB 2GB/12xCD/2MB VRAM
Price War — We will beat any CPU Price
$1,999 #A1667

Power Macintosh® 6500/250MHz
32MB 4GB/12xCD/Zip/Modem
Price War — We will beat any CPU Price
$2,149 #A1937

Power Macintosh® 6500/250MHz
48MB 4GB/12xCD/Zip/Modem
Price War — We will beat any CPU Price
$2,395 #A1943

Power Macintosh® 6500/225MHz
32MB 3GB/12xCD/Modem
Price War — We will beat any CPU Price
$1,899 #A1945

PowerMac4400/200MHz
16MB/2GB/8xCD/2MB VRAM/L2 Cache
WOW! $1,449 #A1700

Performa CPU's

Performa® 6360 Look at This!
160Mhz 16MB Ram 1.2GB Hard Drive, 28.8 Fax/Modem
$1,049 #A1680
6400CD/180MHz/16MB/1.6GB/8xCD ..... $1,299 #A1199
6400CD/200MHz/16MB/2.4GB/8xCD ..... $1,499 #A1189

Macintosh PowerBook

1400CS 16MB/750MB/6xCD/117MHz #A1722 $1749
1400C 16MB/1-GB6xCD/133MHz ... #A1 2 $2595

In Stock Now!

3400C/180 16MB/1.3GB/6xCD/180MHz ... #A1 3 $4444
3400C 16MB/2-GB/6xCD/200MHz .. #A1 34 $4895
3400C 16MB/3-GB/12xCD/240MHz #A1 $5895

APPLE Monitors & Printers

Apple MultipleScan 15"	$369	#M6558	LaserWriter 16/600PS	$2090	#P3250
Apple MultipleScan 15AV	$429	#M6909	LaserWriter 12/640PS	$1349	#P3248
Apple MultipleScan 1705	$629	#M6638	LaserWriter 4/600PS	$799	#P3256
Apple Vision 1710	$729	#M6500	Color StyleWriter 1500	$249	#P3369
Apple Vision 1710AV	$839	#M6567	Color StyleWriter 2500	$333	#P3367
Apple Multiple Scan 20"	$1495	#M6564			

MOTOROLA

Starmax 3000 Desktop 180MHz
16MB 1.2GB/8xCD/Modem
$1,244 #A1021

Starmax 3000 Desktop 200MHz
16MB 1.2GB/8xCD/Modem
$1,441 #A1024

Starmax 3000 Mini-Tower 180MHz
32MB 2.5GB/8xCD/1MB Vram
$1,359 #A1023

Starmax 3000 Mini-Tower 200MHz
32MB 2.5GB/8xCD/1MB Vram
$1,616 #A1026

Starmax 3000 Mini-Tower 240MHz
32MB 2.5GB/8xCD/4MB Vram
$2,040 #A1036

Starmax 4000 Desktop 160MHz
16MB 1.2GB/8xCD/1MB Vram
$1,441 #A1028

Starmax 4000 Desktop 200MHz
16MB 1.2GB/8xCD/2MB Vram
$2,060 #A1032

Starmax 4000 Mini-Tower 160MHz
32MB 2.5GB/8xCD/2MB Vram
$1,629 #A1030

Starmax 4000 Mini-Tower 200MHz
32MB 2.5GB/8xCD/2MB Vram
$2,269 #A1034

Starmax 5000 Exciting New Systems Call for details

5 Year Warranty on all Starmax Computers

ViewSonic®

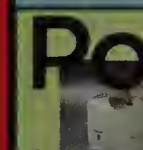
P815 21" Display .25mm $1599 #M6915
17GA 17" W/Speakers ... $1569 #M9347
PT775 17" Display .25mm $879 #M6911

UMAX®

The Magic of Color #S8520

PowerLook II
36 bit color
600x1200DPI
$1274
Free Trans. Adapter
Photoshop Full, Binuscan Software
Mirage(11x17) ..... Call #S8560
Astra 600S PhotoDeluxe $245 #S8921
Vista S12 LE ..... $489 #S8564
Vista S12 Full ..... $626 #S8565

Polaroid



$1399
SprintScan 35/es #S8547
2700DPI, Fast Scanning
SprintScan 35 LE ..... $709 #S8555
SprintScan 35+ ..... $1729 #S8550
SprintScan 45 ..... $8195 #S8543

GLOBAL VILLAGE COMMUNICATION

PowerPort PC Cards
Platinum 28.8 ..... $199 #F815
Platinum Pro 28.8/10BaseT $299 #F814
TelePort Series
Internet 33.6 ..... $149 #F8121
SpeakerPhone 33.6 ..... $189 #F8122
Call for the 56K SPEEDS

AGFA

ARCUS II #S8482
36 bit color
600x1200DPI
$1459
FREE Trans. Adapter
Photoshop Full, FotoLook, Foto Tune Lite
StudioStar Full Photoshop $895* #S8496
600 x 1200 dpi 30 bit color scanner
StudioStar LE ..... $699* #S8493
600 x 1200 dpi 30 bit color scanner
SnapScan ..... $299 #S8492
300 x 600 dpi 24 bit color scanner
*after $75 manuf. mail in rebate

Nikon ELECTRONIC IMAGING

SuperCoolScan $1649
External ..... #S8503
Single Pass RGB, 2700DPI
Scans Positive, negative, Color or monochrome 35mm
LS-20 Coolscan II .... $1149 #S8500

miro

miroMOTION DC 20 ..... $589 #V9250
miroMOTION DC 30 ..... $869 #V9347
miroMOTION DV 100 .... $879 #V9349

WACOM

ARTPAD II 4 x 5..... $135 #T9513
ARTZ II 6 x 8 ..... $289 #T9500
ARTZ II 12 x 12 ..... $399 #T9503

We are located at: 6924 CANBY AVE. UNIT#104, RESEDA CA. 91335
Mon-Fri, 8AM to 6PM (Pacific) Sat. 9AM to 5PM

LOWRATES BUSINESS LEASING AVAILABLE

DISCOVER MasterCard VISA

Circle 258 on rader service card

WE WILL TRY TO MATCH OR BEAT ANY ADVERTISED PRICE. CALL FOR LATEST PRICING!

WE ACCEPT PO'S FROM QUALIFIED FIRMS

M E M O R Y

SECURITY WILL CALL WINDOW NOW OPEN!
NO SURCHARGE FOR MC, VISA AE & DISCOVER

L.A. Trade has served the PC market for 10 years...

MACINTOSH MEMORY UPGRADES

Now we bring our expertise to the Apple Macintosh user.

YOUR MACHINE	STANDARD	MAX	VIDEO UPGRADE	VIDEO COST	256K/ 512K CACHE	2MB	4MB	6MB	8MB	10MB	12MB	16MB	20MB	24MB	32MB	36MB	48MB	64MB
Apple PowerBook 190, 190CS, 5300 Series	4	32					59		99		129	139		189	229		479	
Apple PowerBook 520, 520c, 540, 540c Notebook	4	36					49		69		89	109		189	229			
Apple PowerBook DUO 210, 230, 250 Notebook	4	24					49	65	79	99	119	139	175	28=248				
Apple PowerBook DUO 270c Notebook	4	32					49	65	79	99	119	139	175	28=249				
Apple PowerBook DUO 280, 280c Notebook	4	40					49	65	79	99	119	139	175	28=249		329		
Apple PowerBook DUO 2300c/100 Notebook	4	40							79	99	119	139	175	199	249	329	419	
Apple PowerBook 1400	4	40							79			129		199	239		419	
Apple PowerBook 3400C EDO												Call			Call			Call
Apple PowerBook 5300 Series											Call	Call		Call	Call	Call	Call	Call
Apple Macintosh TV	5	8					24											
Apple Macintosh IIfx 64 pin	4	128					119					199						556
Apple Macintosh IIsi	2/3/5	17					40		60			108						
Apple Macintosh IIvx & IIvi	4	68	512k	59			40		60			108						556
Apple Macintosh Classic II, LC, LCII	2/4	10	512k	59		24	48		58									
Apple Macintosh LCIII, LC475, LC550, LC575, LC580	4	36	256k	34			24		49			95			189			
Apple Macintosh LC520	5	36					24		49			95			189			
Apple Macintosh LC580	5	36					24		49			95			189			
Apple Macintosh LC499	4	36					24		49			95			189			
Apple Macintosh LC5200	5	36					24		49			95			189			
Apple Macintosh LC630	5	36					24		49			95			189			
Apple Macintosh IIci	1/5	128					48		140									549
Apple Macintosh II, IIx, IIcx (w/Pal)	1	32					48		124			136						
Apple Macintosh SE30	1/2	32				24	48		124			136			189			
Apple Performa 400	4	10				24	48		124									
Apple Performa 405, 410, 430	4	10				24	48		124									
Apple Performa 450, 460, 466, 467, 475, 476	4	36	256k/512k	34/68			29		49			99			189			
Apple Performa 550, 560, 575, 577, 578, 580	5	36					29		49			99			189			
Apple Performa 600, 600CD	4	68	512k	59			48		189			99						556
Apple Performa 6110CD, 6112CD, 6115CD (pairs)	8/16	72					29		49			95			189			
Apple Performa 6117CD, 6118CD (pairs)	8/16	72					29		49			95			189			
Apple Performa 630, 630CD, 636	4	36					29		49			95			189			
Apple Performa 631CD, 636CD, 640CD	8	52					29		49			95			189			
Apple Performa 635CD	5	36					29		49			95			189			
Apple Performa 637CD, 638CD	8	36					29		49			95			189			
Apple Performa 5200 Series 5200CD, 5215CD, 5300	8	64					29		49			95			189			
Apple Performa 6100 Series 6116CD (pairs)	8	72					29		49			95			189			
Apple Performa 6200 Series 6200CD, 6216CD, 6218CD	8	64					29		49			95			189			
Apple Performa 6200 Series 6220CD, 6230CD, 6290	8	64					29		49			95			189			
Apple Performa 6205CD, 6214CD	8	64					29		49			95			189			
Apple Performa 6300CD, 6320	16	64					29		49			95			189			
Apple Performa 6400CD, 6360 (2K Refresh)	16	64			94		29		49			95			189			349
Apple Centris 610, 650, 660 AV	4	68	512k	59			29		49			95			189			
Apple Quadra 605	4	36	512k	59			29		49			95			189			
Apple Quadra 610	4	68					29		49			95			189			
Apple Quadra 630	4	36					29		49			95			189			
Apple Quadra 650	4/8	132/136					29		49			95			189			
Apple Quadra 660AV	4	68					29		49			95			189			
Apple Quadra 700	4	68	512k	59			48					136						559
Apple Quadra 800 (pairs)	8	136	512k	59			29		49			95			189			
Apple Quadra 840AV	8	128	512k	59			29		49			95			189			
Apple Quadra 900	4	256	512k	59			48					136						556
Apple Quadra 950	8	256	512k	59			48					136						556
Apple Workgroup Servers	–	Call					Call		Call			Call			Call			
Apple Power Macintosh 540/120							Call		Call			Call			Call			Call
Apple Power Macintosh 4400, EDO 3.3V	8	72	2M/89, 4M/159	59					45			81			175			349
Apple Power Macintosh 6100/60 (pairs), 66, 66AV	8/16	72			78/–		29		49			95			189			
Apple Power Macintosh 7100/66 (pairs), 66AV, 80, 80AV	8/16	136	512k	59	78/–		29		49			95			189			
Apple Power Macintosh 7200/75/90/120	8/16	256	1mg	69	78/120				45			81			175			349
Apple Power Macintosh 7500/100 (168 pin), 7600/120	8/16	1gig/512	1mg	69	78/120				45			81			175			349
Apple Power Macintosh 8100/80 (pairs), 100, 100AV, 110	8/16	264	512k	59	78/–		29		49			95			189			
Apple Power Macintosh 8200, 100, 120	8/16	256	512k	39	—/129		29		49			95			189			
Apple Power Macintosh 8500/120, 132, 150	8/16	1gig/512	1mg	44	78/120				45			81			175			349
Apple Power Macintosh 9500/120, 9500/132, 150, 180, 200	8/16	768	2mg	95					45			81			175			349
Apple Power Macintosh 9500/150	8/16	264	2mg	95					45			81			175			349
Color Laserwriter 12/600 PS							Call					Call						
Color Laserwriter 12/640 PS							Call		Call			Call			Call			
Color Laserwriter 16/600 PS							Call		Call			Call						
Motorola Starmax 3000 EDO/160, 200; 4000/160, 200	16/32											99			199			

NEW 168 Pin EDO 3.3V Dimms Call!

ALL OTHER POWERBOOKS...
100, 140, 145, 170,
160, 165, 180, 165C, 180C
CALL FOR PRICES!!!

DIMMS, 168 Pin

1x64	8Meg	$ 45	8x64	64Meg	349
2x64	16Meg	81	16x64	128Meg	1280
4x64	32Meg	175			

CALL FOR NEW MODELS NOT LISTED

All products brand new & guaranteed • We buy excess inventory

Trademarks are registered with their respective companies.

L.A. TRADE

22825 Lockness Avenue • Torrance, CA 90501

CUSTOMER SERVICE & TECHNICAL: OPEN M–F, 9–4 PST

POWER COMPUTING

	8MEG	16 MEG	32MEG	64MEG
POWER 80, 100, 110, 120	45.00	81.00	175.00	349.00
POWER CENTER 120, 132, 150, 166, 180	45.00	81.00	175.00	349.00
POWER CURVE 601/120	45.00	81.00	175.00	349.00
POWER TOWER 166/ 180	45.00	81.00	175.00	349.00
POWER TOWER PRO 180, 200, 225	45.00	81.00	175.00	349.00
POWER WAVE 604/120	45.00	81.00	175.00	349.00
POWER WAVE 604/132, 150	45.00	81.00	175.00	349.00
POWER COMPUTING POWER 8ASE (EDO)				

NO SURCHARGE FOR MASTERCARD, AMEX, VISA OR DISCOVER. PURCHASE ORDERS ACCEPTED FROM FORTUNE 2000, GOVERNMENT & INSTITUTIONS. California orders add 8.25% sales tax. Returned orders or ordered wrong parts are subject to a 20% restocking fee. We accept International orders shipped via UPS A.- APO, FPO orders welcome. Customers are expected to pay customs and "other" charges if shipped Int'l. All credit card charges verified for fraudulent use. SORRY, NO REFUNDS AFTER 30 DAYS – EXCHANGES ONLY. If you receive defective merchandise we exchange only—no refunds. We accept M/C, VISA, Discover, AE, prepaid orders, purchase orders, wire transfer, COD (cashiers check) orders, cash & cashiers checks. Orders shipped by UPS, FEDX must be signed for • ALL MANFACTURER PART #'S ARE FOR REF. ONLY • MINIMUM ORDER $40.00 • NO REFUNDS ON SHIPPING

310-539-0019
FAX: 310-539-5844

SECURITY WILL CALL WINDOW NOW OPEN

CALL TOLL FREE **1-800-433-3726** (US and Canada)

ESTAB. 1985

Prices & Availability Subject to Change Without Notice

Mon-Fri, 8:00 a.m. to 5:00 p.m. PST
Sat. 10:00 a.m. to 12:00 noon

Check out our website at www.4LATrade.com

Special Of The Month

Media 100 DX Professional Level Digital Video Capture Card $1969.95

*Component $3795

AGFA · radius · **BOTTOM LINE DISTRIBUTION** · iiyama · Adobe · Newer TECHNOLOGY, INC.

The *one* source for all your Macintosh needs.

http://www.blol.com/macworld/ **1-800-990-5698**

Digital Video Solutions

Digital Video Capture

MiroMotion DC30	889
MiroMotion DC20	*509**
Targa 2000 PCI	3199
Targa 1000 PCI	1879
Truevision Bravado	659
Radius VideoVision PCI	3299

AV High Performance Storage

Seagate ST34371W 4.3GB	959
Seagate ST19171W 9.1GB	1879
Seagate ST32171W 2.1GB	659
IBM UltraStar 2XP 4.51GB	979
IBM UltraStar 2XP 9.10GB	1659

We Custom Build RAID systems, Call For Your Price Quote!

Fast/Wide 68-Pin SCSI Cards

FWB Jackhammer PCI	369
ATTO Ultra SCSI-3	349
Adaptec 2940W Ultra	289
Anubis RAID Software	190

Add 3 Serial Ports For $24.95

Iiyama VisionMaster Pro 21" $1529

Macworld Editors Choice Jan. 97

VisionMaster Pro 9021E 21"	1529
VisionMaster 8221E 21"	1459
Diamondtron 9017E 17"	779
VisionMaster 8617E 17"	679
VisionMaster 8221E 15"	389

Agfa SnapScan $275

AGFA StudioScan IIsi	489
AGFA StudioStar For Mac	889
AGFA StudioStar For PC	889
Agfa Arcus II For Macintosh	*1569*
AGFA Arcus II For PC/IBM	1569
AGFA DuoScan	4279

AGFA ePhoto Digital Camera $409

3% Ca$h Discount On Apple And UMAX Systems!

$3499 — UMAX Computer Corporation SuperMac S900L 604e/225Mhz

- 604e PPC 225Mhz!
- 32MB RAM, 512K Cache
- 8x Speed CD-ROM
- 2GB 7200 RPM HD
- IMS 128 8MB VRAM
- Processor Upgradable
- 1-Year Warranty

$2049 — POWERtools Infiniti 4200 604e/200Mhz

- 604e PowerPC 200Mhz!
- 32MB RAM, 256k Cache
- 16x Speed CD-ROM
- 3.2GB 5400RPM HD
- 2MB VRAM, Kbd. & Mouse
- Processor Upgradable
- 1-Year Warranty

$3499 — Apple PowerMac 9600 604e/200Mhz

- 604e PowerPC 200Mhz!
- 32MB RAM, 512K Cache
- 12x Speed CD-ROM
- 4GB 5400RPM HD
- IMS 128 2MB VRAM
- Processor Upgradable
- 1-Year Warranty

We Offer The Complete Line:

S900L/250Mhz 32/2GB/CD	$4599
S900L/200Mhz 32/2.1GB/CD	$3149
S900L/180Mhz 32/2GB/CD	$2839
S900L/200Mhz Dual Processor	$4169
J700L/150Mhz 16/2GB/CD	$2079
J700L/180Mhz 24/2GB/CD	$2369
C600L/180Mhz 16/1.2/CD	$1439
C600L/200Mhz 16/2.1/CD	*$1599*
C600L/240Mhz 24/2.1/CD	$1949

Pre-Configured Systems:

Infiniti 4200/200 16/2GB/CD	$1859
Infiniti 3240/240 16/2GB/CD	$1699
Infiniti 3200/200 16/2GB/CD	$1499
Infiniti 3180/180 16/2GB/CD	$1375

Customize w/Bare Bones Systems:

Infiniti 4200/200Mhz 604e	$1379
Infiniti 3240/240Mhz 603e	$1179
Infiniti 3200/200Mhz 603e	$979
Infiniti 3200/180Mhz 603e	$799

All New Apple Systems:

PowerMac 6500/225 32/3/12X	$1976
PowerMac 6500/250 32/4/12X	$2275
PowerMac 6500/300 64/4/12X	$2989
PowerMac 4400/200 16/1.2/8X	$1619
PowerMac 7300/180 16/2/12x	$2179
PowerMac 7300/200 32/2/12x	$2559
PowerMac 8600/200 32/2/12x	$3099
PowerMac 9600/200MP	$4559
PowerMac 9600/233Mhz	$4189

w/Any System Purchase Add RAM At Discount Prices!

Apple/UMAX DIMMs		PowerTools DIMMs		VRAM	
8MB	$47	32MB	$187	1MB PCI	$28
16MB	$84	64MB	$397	4MB IMS	$269
32MB	$167	256k L2 Cache	87	*8MB IM2*	*$597*
64MB	$387	512k L2 Cache	137	ATI VR 4MB	$289

All RAM Has A Lifetime Warranty From Bottom Line!

Internet Solutions

Apple Server 7350/180 48/4GB/CD	3399
Apple Server 9650/233 64/4GB-UW/CD	5799
Purity Software WebSiphon ACGI v1.0	*479*
WebSTAR World Wide Web Server v2.0	399
Sonic Internet Server Suite v1.0	949
Adobe PageMill v2.0	94.95
ClarisWorks v4.0 w/Homepage v2.0	98.95
Specular 3D Web WorkShop	149

Storage/Back-Up

Quantum Fireball 2.1GB Internal	379
Quantum Fireball 3.2GB Internal	419
Quantum Fireball 6.4GB Internal	639
Sony SDT-7000 DAT Drive 8GB	959
Sony Sony DDS-3 SDT-9000	1279
SyQuest SyJet 1.5GB Internal	379
SyQuest SyJet 1.5GB External	479
*Pinnacle Micro Apex 4.3GB *Shipping**	*1479*
IBM Ultrastar 2ES 4..3GB	679

Digital Cameras

Kodak Digital Science DC-25	479
Kodak Digital Science DC-50	649
Kodak Digital Science DC-120	899
Sony DSC-F1 Digital Camera	829
Olympus D-200L Digital Camera	519
Olympus D-300L Digital Camera	885
Polaroid PDC-2000	3399
Epson PhotoPC 500	489
Apple QuickTake 200	609

Aceleration!

Newer MaxPowr 180Mhz 604e	599*
Newer MaxPowr 200Mhz 604e	819*
Newer MaxPowr 225Mhz 604e	998*
PowerTools 200Mhz 604e	899
Techworks 256k L2 Cache Card PCI	89
Techworks 512k L2 Cache Card PCI	149
PowerClock 6100/7100-66 84Mhz	*59*
256k Cache Card For 61xx/7100/8100	29

*Price after rebate check http://www.blol.com/rebate

Iomega

Iomega Zip $144

Iomega Zip Drive External	144
Iomega Zip Drive Internal	139
Iomega Zip/Jaz Internal Kits	29
Iomega Jaz Drive Internal/External	*279/379*
Iomega Jaz Drive 1GB Carts. Singles	89
Iomega Zip Drive 100MB Carts. 10-Pack	119*

*Price after rebate check http://www.blol.com/rebate

Monitors

Apple 1710	799
Viewsonic OptiQuest Q71 17"	539
Viewsonic 17EA w/Speakers	629
Viewsonic OptiQuest Q100 20"	1069
Samsung SuyncMaster 6NE 17"	599
Sony 200sx 17" Monitor	679
Mitsubishi Diamond Pro 91TXM 21"	1559
Mitsubishi Diamond Pro 87TXM 17"	769

PowerBooks/RAM Modules

PowerBook 1400 Series:

PowerBook 1400cs 16/750	1749
PowerBook 1400cs 16/750/6xCD	1939
PowerBook 1400c/133Mhz	3129

1400 Memory Modules:

Newer Technology		Viking/Techworks	
12MB Stackable	$109	16MB Stackable	$159
16MB Stackable	$169	24MB RAM	$189
24MB Stackable	$239	32MB RAM	$299

PowerBook 3400 Series:

PowerBook 3400c/180Mhz	4395
PowerBook 3400c/180/CD	4786
PowerBook 3400c/200/CD	5299
PowerBook 3400c/240/CD	6299

3400 Memory Modules:

16MB RAM	$119	64MB RAM	$539
24MB RAM	$159	96MB RAM	$819
32MB RAM	$209	128MB RAM	$1065

Scanners

*UMAX Astra 600s *NEW**	*259*
UMAX S-12 Scanner w/Photoshop LE	499
UMAX PowerLook II w/Photoshop	1349
Epson Expression 636 Upgrade	719
Microtek Scanmaker E3	194
Microtek Scanmaker E6	575
Microtek Scanmaker III 600x1200	1429
Polaroid Sprintscan LE	849
HP Scanjet 4P w/Photoshop LE	549

CD-ROM Labeler $54.95

230/128MB Optical Carts $19.00/$15.00

Global Village SpeakerPhone 33.6k Modem $94.95

CyberDrive 12x CD-ROM External $169

http://www.blol.com/macworld 1-800-990-5698

Shipping: **$5, 5 lbs., 2 Days** Payment: No surcharge on credit cards. Corporate POs welcome. Tax: Texas residents add 8.25% sales tax. Prices: Items, prices and availability subject to change. Returns: Call for RMA number. Must be in original condition, opened software is non-refundable. Subject to a restocking fee. Original shipping is non-refundable. Apple brand products are not returnable for refund. Bottom Line Distribution cannot be responsible for errors in typography or photography. Customer Service:512-892-4090. International Sales: Bottom Line Distribution is committed to the needs of the international Macintosh user. We offer discounted rates with DHL. Delivery to most countries is 2 to 3 days. Dealer inquiries are welcome. Language interpreters available. Address: 4544 S. Lamar Blvd., #100, Austin, TX 78745

VISA · **BOTTOM LINE DISTRIBUTION**

THE BEST DEALS

MacMall

YOUR #1 MAC CATALOG!™

NEW! Adobe Illustrator 7.0

Upgrade! w/FREE LogoMotion 2.0

$97.99! #94834

Adobe Photoshop 4.0

Upgrade! w/FREE Strata Vision 3D

$149.99! #94363

NEW! Painter 5 Upgrade!

Upgrade! w/FREE Fetch 1.5

$98.99! #95092

NEW! Norton Utilities 3.5 Mac

'50 Rebate Offer!

price after '50 mail-in rebate for owners of Norton Utilities Mac or Mac Tools

$44.99*! #94820

SYMANTEC.

Mac OS 7.6 CD Upgrade

requires proof of owners of 7.5

$68.99 #78343

MacMall has it all

MacMall® DEALS

MODEMS

Smart One 33.6Kbps Fax Modem *after '20 mail-in rebate	'69.99*	#88083
Smart One 56Kbps FaxModem	'169.99	#93030
Smart One 56Kbps SpeakerPhone Fax Modem	'189.99	#93033
TelePart 56K, X2	'218.99	#93571
TelePart 56K Flex	'218.99	#93572

PRINTERS

HP DeskWriter 600	'149.99	#73683
HP DeskWriter 600 with color kit & Cardshop Plus! Deluxe	'199.99	#90739
HP DeskWriter 680C w/Cardshop Plus! Deluxe	'299.99	#87584
HP LaserJet 6MP w/Free e-mail directory	'49.99	#93495
HP DeskJet 870Cse	'499.99	#82695
Phaser 140 Color Postscript	'1,799.99	#87634

MONITORS

Techmedia TCM-1764 17" Monitor	'489.99	#90937
Techmedia TCM-1564 15" Monitor	'269.99	#90463
OptiQuest Q53 15" .28 dot pitch	'299.99	#92652
Radius PrecisionView 21	'1,799.99	#73557
Viewsonic 17GA 17" MultiMedia Display	'689.99	#72492

UTILITIES

Spring Cleaning™	'49.99	#85741
RAM Doubler 2	'49.99	#82525
Microsoft FrontPage 1.0	'139.99*	#92299
Adobe Type Manager Deluxe 4.0 Bundle	'68.99	#85622
Debabelizer Toolbox 1.6.5 w/FREE Jag II	'249.99	#91427

BUSINESS

NOW Up-To-Date & Contact 3.6.5 *after '20 mail-in rebate	'78.99*	#93422
Netscape Navigator *after '20 mail-in rebate	'28.99*	#93434
MYOB	'78.99	#85650
Quicken Deluxe 7.0 *after '20 mail-in rebate	'39.99*	#84356
Street Atlas/Phone	'38.99	#79852

GRAPHICS

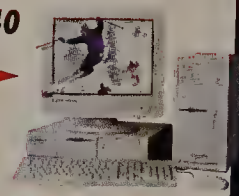
Director 6 Multimedia Studio Upgrade	'489.99	#91223
FreeHand Graphics Studio 7 Upgrade	'189.99	#84730
QuarkXPress 3.3.2 with FREE Quark XPress for Dummies Book	'659.99	#94842

EDUTAINMENT

The Last Express	'49.99	#93096
PrintShop Ensemble	'56.99	#93095
Maria Teaches Typing	'36.99	#82951
Apache/Capitalism Bundle	'59.99	#89684

PowerComputing

PowerBase 240 Mini-Tower



603e 240MHz
16MB/1.2GB
8X CD/256K

$1995! Monitor sold separately #83545

PowerCenter 150 Low Profile

604 150MHz
16MB/1GB
8X CD/1MB VRAM

$1495! Monitor sold separately #85961

PowerTower Pro 225

604e 225MHz
32MB/2GB
8X CD/8MB VRAM

$3695! Monitor sold separately #90239

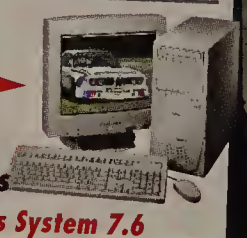
MOTOROLA

StarMax 3000 DT/200

603e 200MHz
16MB/1.2GB
8X CD/256K

$1299! Monitor sold separately #93932

StarMax 4000 MT/160

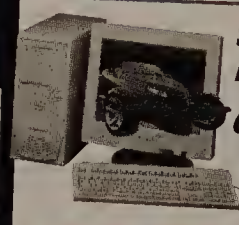


604e 160MHz
32MB/2.5GB
8X CD/28.8Kbps

Now Includes System 7.6

$1899! Monitor sold separately #93941

StarMax 4000 MT/200



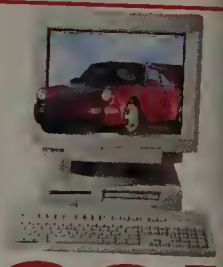
604e 200MHz
32MB/4.3GB
16X CD/Zip

Includes Microsoft Office!

$3099! Monitor sold separately #93945

UMAX®

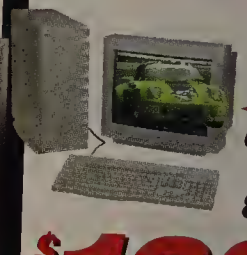
SUPERMac C500/140



603e 140MHz
16MB/2.1GB
8X CD-ROM

HOT LOW PRICE! $999! Monitor sold separately #95069

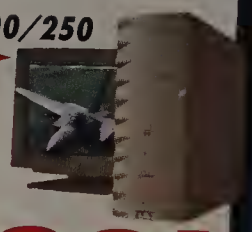
SUPERMac C600/200



604e 200MHz
16MB/2.1GB
8X CD/33.6Kbps

$1699! Monitor sold separately #94300

SUPERMac S900/250



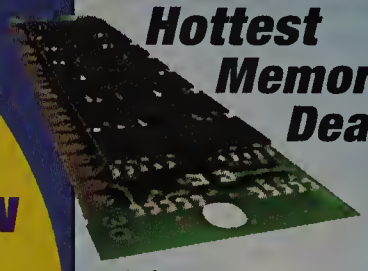
604e 250MHz
32MB/2.1GB
8X CD/512K

$4899! Monitor sold separately #90687

Order today — Get it tomorrow by 10:30a.m.

Open 24 Hours!

Hottest Memory Deals



Ask for your FREE copy of Marathon II*

8MB DIMMS '69.99 #72645
16MB DIMMS '139.99 #72646
32MB DIMMS '249.99 #72647

*with any memory purchase from MacMall

FREE Software with your Zip Purchase

50 Price Drop!

$149.99! #90177

Zip Drive with FREE DataSaver & NETCOMplete Software

Zip Drive and 10-pack Zip Disks with Speed Doubler 2 $299.99*

*After $20 mail-in rebate. #93968

Zip2GO Portable Battery for the Iomega Zip Drive

Zip Drive not included.

NEW!

$39.99! 87795

ABSOLUTE™

Live Picture 2.5 — SAVE OVER $400 — Only $194.99! #81985

Casady & Greene Conflict Catcher 4 — $34.99* #91328 — *Price after 30 mail-in upgrade rebate

CorelDRAW 6 Competitive Upgrade — FREE A-10 ATTACK! — $148.99! #92755

Alien Skin Eye Candy3.0 — NEW! — $124.99 #92577

Order And Register to Win a NEW Mercedes SLK!

...FOR LESS!

SUPER SYSTEM SAVINGS!

MultiScan 15SX Monitor refurbished — $279.99! #91410

SONY

Multiscan 15sfii monitor - refurbished $299.99 #91531

Multiscan 20sfii monitor - refurbished $1,199.99 #91533

Smart One 33.6 Fax Data Modem — *Price after $20 mail-in rebate — $69.99*! — BEST DATA PRODUCTS, INC — #88083

MICROTEK ScanMaker E3 — Includes ScanWizard, Color It! and OmniPage LE — HOT NEW PRICE! — $199.99! #78323

MOTOROLA StarMax 3000 DT/180

- 180MHz Power PC 603e
- 16MB RAM
- 1.2GB HD
- 8X CD-ROM Drive
- 28.8Kbps

Now Includes System 7.6!

Monitor sold separately — $1249! #93928

UMAX SUPERMac C500/180

- 180MHz Power PC 603e processor
- 16MB RAM
- 1.2GB Hard Drive
- 8X CD-ROM Drive

Monitor sold separately — $1199! #90987

MOTOROLA StarMax 3000 MT/180

- 180MHz Power PC 603e processor
- 32MB RAM
- 2.5GB Hard Drive
- 8X CD-ROM Drive
- 28.8Kbps Modem

Monitor sold separately

Now Includes System 7.6!

$1395! #93930

PowerComputing PowerBase 180LP

- 180MHz Power PC 603e
- 16MB RAM
- 1.2GB HD
- 8X CD-ROM Drive
- 2MB VRAM
- Low Profile Case

NEW LOW PRICE!

Monitor sold separately — $1295! #83548

Jaz 1GB Drive — 100 PRICE DROP!!! — Jaz 1GB SCSI Internal #90174 Now Only $299.99! — Jaz 1GB SCSI External $399 #74545

Arriva 12X External CD-ROM Drive — $199.99! #87873 — Arriva 12X w/A-10 Attack $219 #92191 — Arriva 12X w/A-10 Attack and Pyst . . . $229 #92192

Epson Stylus Color 600 Printer — 1440 x 720dpi Up to 6ppm — EPSON — $299.99! #90224 — Stylus Color 800 Printer . . . . $449 #90225

Spring Cleaning by Aladdin w/any MacMall Purchase — ONLY! $9.99! #85940 — Aladdin Systems

Alps Glidepoint w/any MacMall Purchase — $9.99 — (Actual product not shown) #95194

25-Pack Color Floppies SONY — $7 regular price − $7 mail-in rebate = $0.00 your cost! #92737

IMPORTANT: While we do our best to check for errors, mistakes may occur—please call to verify pricing.

Four reasons why MacMall is the best choice for all your computing needs:

FedEx THE FASTEST OVERNIGHT DELIVERY AVAILABLE

A MacMall Exclusive! Call as late as 11:00 p.m. EST and get your order by 10:30 a.m. the next day via FedEx Priority Overnight.

CUSTOM CONFIGURATION

Have the system you want, custom-configured by our factory-trained technicians.

EXCLUSIVE DEALS & SPECIAL OFFERS

We ALWAYS give you more for your computing dollar.

OVER 22,000 PRODUCTS

You can count on us to have the products you want, when you want them!

BIG $50 REBATE! — 1-800-222-2808

Get your FREE issue today!

Please check issue(s) you wish to receive.

☐ MacMall® ☐ PC Mall ☐ DataCom Mall

Name _____

Address _____

City _____

State _____ Zip _____

Mail to: MacMall, Dept. ADV., 2645 Maricopa St., Torrance, CA 90503

MacMall

Place Your Order 24 Hours a Day

1·800·217·9498

Priority Code: MacWorld ZMWD771

THE STORAGE LEADER!

HARD DRIVES

1.2GB TEMPEST 128K CACHE 4500 RPM Internal — $219

ATLAS II Internal — $799 — 4.5GB

Quantum

Quantum Tempest drives carry a 3 Year Warranty
Quantum Atlas drives carry a 5 Year Warranty

Description	Model	Access	Interface	RPM	Int	Ext
1.2GB Tempest	QM31280TMS	10.5ms	Ultra SCSI-3	4500	$219	$269
2.1GB Tempest	QM32100TMA	11ms	Fast ATA-2 (IDE)	4500	$229	----
2.1GB Tempest	QM32150TMS	10.5ms	Ultra SCSI-3	4500	$299	$349
2.1GB Stratus	QM32160STS	10ms	Ultra SCSI-3	5400	$319	$369
3.2GB Tempest	QM33200TMA	11ms	Fast ATA-2 (IDE)	4500	$269	----
3.2GB Tempest	QM33250TMS	10.5ms	Ultra SCSI-3	4500	$349	$399
3.2GB Stratus	QM33240STS	10ms	Ultra SCSI-3	5400	$369	$419
3.8GB Tempest	QM33840TMA	11ms	Fast ATA-2 (IDE)	4500	$329	----
4.3GB Stratus	QM34320STS	10ms	Ultra SCSI-3	5400	$489	$539
4.5GB Atlas II	QM34550ALS	8ms	Ultra SCSI-3	7200	$799	$849
4.5GB Atlas II	QM34550ALW	8ms	UltraWide SCSI-3	7200	$899	$979
6.4GB Stratus	QM36480STS	10ms	Ultra SCSI-3	5400	$599	$649
9.1GB Atlas II	QM39100ALS	8ms	Ultra SCSI-3	7200	$1399	$1449
9.1GB Atlas II	QM39100ALW	8ms	UltraWide SCSI-3	7200	$1449	$1529

Western Digital

NEW AT CLUBMAC

Description	Model	Access	Interface	RPM	Int	Ext
2.1GB Enterprise	WDE2170S	8ms	Ultra SCSI-3	7200	$539	$589
2.1GB Enterprise	WDE2170W	8ms	UltraWide SCSI-3	7200	$589	$669
4.3GB Enterprise	WDE4360S	8ms	Ultra SCSI-3	7200	$799	$849
4.3GB Enterprise	WDE4360W	8ms	UltraWide SCSI-3	7200	$849	$929

Seagate

Seagate drives carry a 5 Year Warranty

Description	Model	Access	Interface	RPM	Int	Ext
2.1GB Barracuda 4LP	ST32171N	8.5ms	Ultra SCSI-3	7200	$579	$629
2.1GB Barracuda 4LP	ST32171W	8.5ms	UltraWide SCSI-3	7200	$629	$709
4.3GB Barracuda 4LP	ST34371N	8.5ms	Ultra SCSI-3	7200	$839	$889
4.3GB Barracuda 4LP	ST34371W	8.5ms	UltraWide SCSI-3	7200	$899	$979
4.3GB Cheetah	ST34501N	8ms	Ultra SCSI-3	10000	$979	$1029
4.3GB Cheetah	ST34501W	8ms	UltraWide SCSI-3	10000	$1029	$1129
9.1GB Barracuda 9	ST19171N	8ms	Ultra SCSI-3	7200	$1539	$1589
9.1GB Barracuda 9	ST19171W	8ms	UltraWide SCSI-3	7200	$1599	$1679
23GB Elite 23	ST423451N	8ms	Fast SCSI-2	5400	$3149	$3249
23GB Elite 23	ST423451W	8ms	Fast&Wide SCSI-2	5400	$3249	$3349

TOSHIBA — 2.5" HARD DRIVES

Description	Model	Access	Interface	RPM	Int	Ext
810MB TravelStar	MK1926FBV	12ms	2.5" Fast SCSI	4500	$499	----

THE CLUBMAC PACKAGE ClubMac drives are preformatted and thoroughly tested. ClubMac drives include a 30-Day Money Back Guarantee, Charismac Anubis Formatting Utility software, user's guide, brackets (wide drives include internal ribbon cable), 25/50-pin SCSI cable and power cord for external drives (wide drives include 68/68 pin SCSI cable).

CLUBMAC CD & CD RECORDABLE

ClubMac 12X — $179
1800KB/sec data transfer
100ms avg access time
Caddy-less design

ClubMac 2X/6X CD Recorder — $499
Your Choice: Discribe / Toast 3.0

CLUBMAC CD-ROM READERS
- 12X 140ms 1800k/sec $179
- 4 disk 8X CD changer 140ms 1200k/sec $259
- NEC 4X 7 disk changer $199

CLUBMAC CD-RECORDERS
- 2X/6X CD-R w/Discribe $499
- 2X/6X CD-R w/Toast Pro 3.0 ..... $499
- 4X/6X CD-R w/Toast Pro 3.0 ..... $799
- Yamaha 4X/6X CD-R w/Toast Pro 3.0 ..... $999

THE CLUBMAC PACKAGE
ClubMac CD-ROM & CD Recorders are thoroughly tested. CD-ROM & CD Recorders include a 30-Day Money Back Guarantee, Charismac CD AutoCache utility software, user's guide, 25/50-pin SCSI cable, terminator, and power cord.

TAPE BACK-UP

ClubMac DDS-2 DAT Drive — $799

CLUBMAC TAPE BACK-UP
- 4-8GB DDS-2 Compression DAT Drive $799
- 4-8GB DDS-2 Performance DAT Drive $899
- 12-24GB DDS-3 Lightning DAT Drive $1199
- 24-48GB DDS-2 DAT Auto Loader $2499
- 25-50GB 8mm AIT Drive $3699

REMOVABLE

1.5GB syJet 1.5 — $499

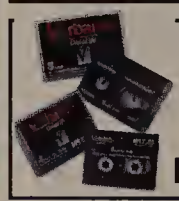
REMOVABLE DRIVES
- ClubMac SyQuest 200MB 5.25" $389
- SyQuest EZ Flyer 230MB 3.5" $299
- SyQuest SyJet 1.5GB 3.5" $499
- Nomai 540MB 3.5" $249

*Price after $50 Rebate. ends 6/30/97

FEATURING SyQuest REMOVABLE TECHNOLOGY

Genuine SyQuest Media — as low as $23

Media	Qty 1	Qty 10	Qty 20
44MB	$40ea	$39.50ea	$39ea
88MB	$44ea	$43.50ea	$43ea
200MB	$69ea	$68ea	$67ea
270MB	$57ea	$56ea	$55ea
EZ135MB	$24.95ea	$23.95ea	$23ea
EZ230MB	$30ea	$29.50ea	$29ea
1.5GB SyJet	$124ea	$110ea	$99ea



Verbatim
Get a FIVE pack of 120M DAT Tapes for $75

5.25" SyQuest Compatible Media as low as $33

Zip Drive Solutions

$149.95 — Includes One Free Cartridge — 100MB

IOMEGA ZIP DRIVES
- Zip Drive w/one cartridge $149.95
- Zip Bundle - Zip drive, 11 Disks, Case, 2 Caddy's $279*
- Zip Drive Internal - all PowerMacs $179
- Zip Drive Internal - all PowerComputing/Umax $159

*$20 Mail-in rebate - Zip 10 pak only.

Jaz Drive Solutions

$399.95 — Includes One Free Cartridge — 1.0GB

IOMEGA JAZ DRIVES
- Jaz Drive w/one cartridge $399.95
- ClubMac Jaz Drive w/one cartridge $369
- ClubMac Jaz Drive w/three cartridges $469
- Jaz Drive Internal - all PowerMacs $299
- Jaz Drive Internal - all PowerComputing/Umax $279

MEMORY

SOUTHLAND MICRO SYSTEMS
ClubMac Slashes Memory Prices
LIFE TIME
Guaranteed Compatibility
memory as low as $25
Memory prices fluctuate frequently, please call for latest prices.

32-Bit 72pin SIMMS		64-Bit 168pin DIMMS	
4MB	$25	8MB	$55
8MB	$49	16MB	$115
16MB	$115	32MB	$225
32MB	$225	64MB	$435

Video RAM
- 2MB VRAM for ATI XClaim GA $95
- 256K VRAM $25
- 512K VRAM 8100 & 605 ..... $30
- 1MB VRAM 7200, 7500, 7600, 8500 $39

Cache Memory for PowerMacs & PowerPC Performas
- 256K level 2 cache 7100, 8100 ..... $73
- 256K 7200, 7500, 7600, 8500 ..... $75
- 512K 7200, 7500, 7600, 8500 ..... $125

MANY MORE UPGRADES AVAILABLE

ZIP MEDIA

Format	Part#	Qty 1-2	Qty 3-9	Qty 10+*
MAC	1040 1006	$19.95	$16.65	$12.99*
PC	1040 1009	$19.95	$16.65	$12.99*

JAZ MEDIA

Format	Part#	Qty 1-2	Qty 3-5	Qty 6+
MAC	1040 1015	$124.95	$99.95	$89.95
PC	1040 1037	$124.95	$99.95	$89.95

Source Code 690797

ORDER 24 HOURS A DAY • 7 DAYS A WEEK

ClubMac®

1-800-260-8549

Order On-Line @ http://www.club-mac.com

WARRANTIES: All items manufactured by ClubMac are returned to ClubMac for warranty repair. All other items carry manufacturer's warranty. MONEY BACK GUARANTEE: All products manufactured by ClubMac carry a 30 day money back guarantee. ClubMac extends all other manufacturers' return policies to its customers. Non-ClubMac products carry 30 day money back guarantee when specified. RETURNS: Call for RMA number. Any product that is returned WITHOUT an RMA number will be refused. ALL PRODUCT INFORMATION AND PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS.

1-800-260-8549 1-800-260-8549 1-800-260-8549

Clubmac has the BEST PRICES on Apple, PowerComputing, Umax and Motorola systems!

PowerCenterPro™ — PowerComputing

Exclusive 60MHz Bus

- 180 or 210MHz PowerPC 604e Processor
- Exclusive 60MHz Bus
- 3D Graphics acceleration
- 1MB Level 2 Cache
- Upgradeable CPU daughter Card
- 16MB RAM
- 2GB Hard Drive
- 16X CD ROM
- $1000 bundled software

PowerCenter Pro 180LP 604e, 180MHz, 16MB RAM, 2.0GB HD, 16X CD .. $2095*
PowerBase 210LP 604e, 210MHz, 16MB RAM, 2.0GB HD, 16X CD .. $2395*

Starting at $2095*

*Monitor sold separately.
MiniTower models available for $100 more.

UMAX® SUPERMAC C500 — Computer Corporation

- 140 or 180Mhz 603e PowerPC
- 1.2GB EIDE hard drive
- 2 PCI Slots
- 16MB onboard RAM
- 256K Level 2 Cache (180MHz only)
- 8X CD-ROM
- 1MB built-in VRAM
- Extended keyboard & mouse
- 16 bit stereo CD quality sound
- 2 high speed serial ports
- Includes software package

SuperMac C500L 140MHZ 603e, 16MB RAM, 1.2GB HD, 8X CD, 1MB VRAM, Desktop Design $999*
SuperMac C500L 180MHZ 603e, 16MB RAM, 1.2GB HD, 8X CD, 1MB VRAM, Desktop Design $1199*

*Monitor sold separately

$999*

SuperMac Systems — UMAX Computer Corporation

$4199

Up to 250MHz PowerPC

Multi-Processor Upgradeable!

Monitor sold separately

NEW LOW PRICE

SuperMac S900L 233MHZ 604e, 32MB RAM, 1GB HD, 128 IMS Video Card 8MB, 8X CD $4199
SuperMac S900L 250MHZ 604e, 32MB RAM, 1GB HD, 128 IMS Video Card 8MB, 8X CD $4899

MOTOROLA StarMax

Up to 240MHz PowerPC

5 Year Warranty!

Starting at $1249

NEW Configurations

NEW Lower Prices

Monitor sold separately

StarMax 3000, 603e 180MHz, 16MB RAM, 1.2GB HD, 1MB VRAM, 8X CD, 256K L2 Cache $1249

ClubMac carries the full line of StarMax Systems!

PowerTowerPro™ 200 — PowerComputing

- Dual Processor Support
- Up to 1GB Memory
- Ultra SCSI/RAID Options
- 1MB Level 2 Cache
- 9 Drive Bays
- Interleaved Memory
- Dual SCSI, Fast Internal

Starting at $3195

PowerTowerPro 200 604e, 200MHz, 32MB, 2GB AV HD, 8X CD, 8MB VRAM IMS card, 6 PCI $3195
PowerTowerPro 225 604e, 225MHz, 32MB, 2GB AV HD, 8X CD, 8MB VRAM IMS card, 6 PCI $3695

MESSAGEPAD

Apple Newton MessagePad 2000

Starting At $949

NOW SHIPPING!

Authorized Catalog Reseller

Apple Newton MessagePad 2000 ..... $949
Apple Newton MessagePad 2000 Bundle $1099
Apple Newton MessagePad 2000 AC adapter $35
Apple Newton MessagePad 2000 Battery $32

MONITORS

SONY. MultiScan 200SX

- 15.9" Viewable image
- .25mm Aperture Grille Pitch

S106 1024

$668

SONY
MultiScan 100SX 15", 1024x768 ..... $359
MultiScan 100SF 15", 1024x768 on screen display $399
MultiScan 200SX 17", 1024x768 ..... $668
MultiScan 200SF 17", 1152x870 ..... $771
MultiScan 300SFT 20", 1280x1024 ..... $1625
RADIUS
PressView 17SR 17", 1600x1200 ..... $1799
PressView 21SR 21", 1600x1200 ..... $2999
PrecisionView 21", 1600x1200 ..... $1799
RASTEROPS
SuperScan MC20 20", 1600x1200 ..... $1349
SuperScan MC600 17", 1280x1024 ..... $599
SuperScan MC801HR 21", 1600x1280 ..... $1879
MC21M 21", Monochrome $649
NEC
5500 15", 1280x1024 .28 dot pitch $329
M500 15", 1024x768 .28 dot pitch $369
M700 17", 1024x768 .28 dot pitch $757
P1150 21", 1360x1024 .28 dot pitch $1939
VIEWSONIC
GA771 w/Speakers 1152x870, 86Hz, .27 dot pitch $616
PT 813, 21" 1600x1200, 85Hz, .28 dot pitch $1669
P 815, 21" 1800x1440, 76Hz, .25 dot pitch $1699
5 GA-2, 15" 1024x768, 85Hz, .27 dot pitch $386

GRAPHIC CARDS

Xclaim VR™ 4MB

$292.95

ATI TECHNOLOGIES INC.

A143 1023

ATI
XClaim VR™ 2MB PCI graphics card $221.95
XClaim VR™ 4MB PCI graphics card $292.95
XClaim TV™ Tuner $82.00
INTEGRATED MICRO SOLUTIONS
Twin Turbo 128M 2MB PCI $269.00
Twin Turbo 128M 4MB PCI $399.00
Twin Turbo 128M 8MB PCI $699.00
IMS Turbo TV $129.99
RADIUS
ThunderPower 30/1600 (PCI) $799
ThunderPower 30/1920 (PCI) $1099
Thunder 3D (PCI) $2899
VideoVision Studio 2.5.1 (NuBus) $1399
VideoVision Studio 2.0 (PCI) $2999

SCANNERS

VISIONEER PaperPort Vx

FREE SCSI ADAPTER

$199†

V029 1008

†Price after $50 mail-in rebate

AGFA
Agfa SnapScan for MAC 600DPI 24-Bit $299
Agfa StudioScan IIsi $499
Agfa Arcus II Desktop Pro Scanner $1645
UMAX
UMAX Astra 600S $239
UMAX Powerlook II w/transparency adapter $1357
EPSON
Epson Expression 636 Executive Model $799
Epson Expression 636 Artist Model $999
Epson Expression 636 Professional Model $1399
Microtek
Microtek Scanmaker III w/trans adapter $1495
Microtek Scanmaker E3 ..... $189
Visioneer
PaperPort Vx w/FREE SCSI adapter ..... $199†

PRINTERS

EPSON Stylus Color 600

$299

E047 1034

EPSON
Epson Stylus Color 600 ..... $299
Epson Stylus Color 800 ..... $449
Epson Stylus Color Pro XL $1499
ALPS
Masterpiece 2300 Micro Dry $749
HEWLETT PACKARD
HP LaserJet 6MP $885
HP DeskJet 870CXI $498

MODEMS

GLOBAL VILLAGE
TelePort 33.6kbps Internet Edition $149
Teleport 56K Fax/modem $215
Teleport 56K Fax/modem w/X2 technology $215
BEST DATA
33.6FLXMAC Fax/Modem $64.95*
56KMAC Fax/Modem $155.95
56KMAC Fax/Modem w/Voice $174.95
MEGAHERTZ *After $20 mail-in rebate. ends 6/16/97
Cruise Card, 33.6 w/ X-Jack, Cellular Ready $226
U.S. ROBOTICS
56k Sportster FAX/Modem w/X2 Technology $217

SOFTWARE

Photoshop 4.0 Upgrade for Adobe

$129.75

A030 1001 40U

Adobe Photoshop 4.0

ADOBE
Illustrator 7.0 full version $374.95
Illustrator 7.0 CD upgrade $89.95
Photoshop 4.0 full version $539.95
Photoshop 4.0 upgrade $129.75
PageMaker 6.5 full version Mac/PMac $539.95
PageMaker 6.5 upgrade CD $89.95
APPLE
System 7.6 upgrade w/AICK $69.95
System 7.6 CD or Disk w/AICK $93.95
CLARIS
FileMaker Pro 3.0 ..... $181.95
FileMaker Pro 3.0 competitive upgrade $89.95
MACROMEDIA
FreeHand 7 upgrade $138.00
FreeHand 7 ..... $374.95
Director 6 Multimedia Studio upgrade $499.00
Director 6 Multimedia Studio $925.00
Director 5 upgrade w/Shockwave $379.00
MICROSOFT
Office Standard 4.2.1 CD or Disk $449.95
Office Standard 4.2.1 upgrade CD or Disk $265.95
SYMANTEC
Norton Utilities 3.5 ..... $99.95
Norton Utilities 3.5 upgrade $39.95
SAM 4.5 ..... $63.95
Suitcase 3.0 ..... $64.85

Free Catalog

ClubMac — COMPARE OUR PRICES & SAVE!

Authorized Catalog Reseller

1-800-258-2622

Contacting ClubMac

Sales and Customer Service (24 Hours a Day, 7 Days a Week)	(800) 260-8549
Inquiries and International Sales (M - F 5am - 9pm PST)	(714) 768-8130
Corporate/Educational Sales (M - F 5am - 5pm PST)	(800) 258-2621
Technical Support (M - F 5am - 9pm PST)	(800) 854-6227
24-Hour Fax	(714) 768-9354

E-Mail: ClubMac Sales ..... cmsales@club-mac.com
Customer Service ..... custsvc@club-mac.com
Technical Support ..... techsup@club-mac.com
Mail: ClubMac ..... 7 Hammond, Irvine, CA 92618

ORDER TODAY!

ORDER 24 HOURS A DAY • 7 DAYS A WEEK

1-800-260-8549

Source Code 690797

Order On-Line @ http://www.club-mac.com

ClubMac®

1-800-260-8549 1-800-260-8549 1-800-260-8549

Expect more than just...
"Hello, can I take your order?"

Expect...

- **Real Mac gurus**
  who offer true solutions
- **True custom configured systems**
  you specify RAM, HD, software, etc.
- **In-house "Techies"**
  support with 4-hour response time
- **Aggressive pricing**
  on over 5,000 graphics products

express direct

Express Direct
The Complete System Specialists.

MOTOROLA UMAX PowerComputing

Apple PowerMac 7300/180MHz
Complete Publishing System

includes:

- 180MHz 604e/32MB/2GB HD/12X CD
- 256k L2/Kb & Mouse
- 17" Hitachi SuperScan MC17 monitor
- Across 24-bit, 300 x 1200dpi scanner
- MetaTools SE Suite: KPT, Bryce II, Goo, etc.
- Adobe Full Photoshop 4.0
- PTS Interactive Training CD's for Photoshop & Quark

only $3769
Lease $129/mo.

SuperMac S900/200MHz

- 200MHz 604e/32MB/2.1GB HD/8xCD
- IMS 4MB card
- 512k L2/Kb & Mouse

monitor sold separately

only $3299

SuperMac S900L/250MHz
Power Publishing & Imaging System

includes:

- SuperMac S900L/250MHz 604e with
- 32MB of RAM/2.1GB HD/8x CD
- 8MB IMS Graphics Card/Kbd & Mouse
- 17" Mag Trinitron Monitor
- Across 30-bit, 600 x 1200dpi scanner
- MetaTools KPT & Convolver Full
- Adobe Full Photoshop 4.0
- QuarkXPress 3.32

only $6985
Lease $239/mo.

Epson Stlyus Pro XL Color Ink Jet Printer

- 12.5" x 18" full-bleed photo quality color
- 720x720dpi Photo-Quality
- FREE Live Picture Productivity Pak
- Ethernet & Adobe PostScript Available

now only $1499

ACROSS MetaScan 600

- 30-bit, 600x1200dpi, Single pass
- Includes OCR software, MetaTools SE Suite, KPT & Bryce II

New!

only $399

- Options:
  Full Photoshop $249
  Transparency Adapter $299

PowerMac 9600/200MHz
Media 100 Digital Video System

includes:

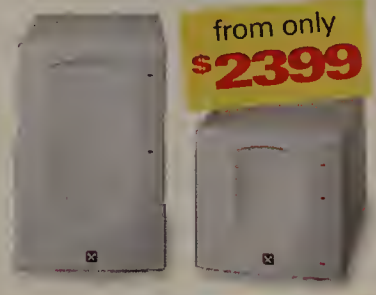
- PowerMac 9600/200MHz 604e with
- 96MB of RAM/4GB HD/12X CD
- Extended keyboard & mouse
- 17" Hitachi SuperScan MC17 Monitor
- Media 100 qx component with Adobe Premiere 4.2 *(After mfr. mail-in rebate)*
- Boris Effects for Adobe Premiere
- Micronet 8GB Digital Array for Media 100 qx with ATTO Ultra SCSI controller
- IMS TwinTurbo 128 4MB graphics card

only $9485
Lease $318/mo.

Hammer Disk Arrays

- New Ultra SCSI drives
- From 4.1GB to 36GB
- Optimized for digital video

from only $2399



Call for a FREE Catalog!

800-765-0020

Order Toll Free M-Th 8am-7pm, Fri til 6pm • 24 Hour Fax
• Customer Service Hotline: **1-800-236-3059**

Shop our Web site for thousands of products & great deals!

www.expressdirect.com

express direct ONLINE

express direct

2720 North Paulina Avenue
Chicago • Illinois • 60614

Apple, the Apple logo, Macintosh, Macintosh Quadra and Power Macintosh are trademarks of Apple Computer, Inc. Prices are subject to change without notice. Mac pricing based on purchase of CPU with monitor. "Stand Alone" CPUs may be more. All returned orders may be subject to a 15% restocking fee plus return shipping. Call for RMA before returning. Software, unless defective, cannot be returned after it has been opened. *Lease prices based on 36 month term with 10% purchase option. Call for complete details

International ORDERS SHIPPED DAILY PHONE: (773)244-3000 • FAX: (773)244-3081

Circle 81 on reader service card

A DIVISION OF WCN

BIG MAC™

http://www.wcn.com

Computers

1831 Pontius Ave., Los Angeles, CA 90025

CALL TOLL FREE 1(800) 761-1999

Toll Free 800.761.1999 • Tel. 310.235.1780 • Fax. 310.235.1790

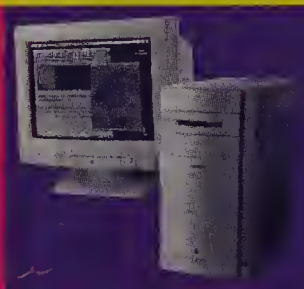
CALL FOR MOST CURRENT PRICES

SPECIAL!

Limited Quantity

1400cs/117	12/750	$1450
24MB additional		$228
6X CD INTERNAL		$299

PACKAGE DEAL



PowerMac 9600/233

96MB RAM
4GB HD • 12XCD
IMS 4MB VIDEO CARD
APPLE 20" COLOR MONITOR
APPLE DESIGN KEYBOARD

$5095

CALL FOR NEW LINE OF PRODUCTS,

WE WILL BEAT ANY ADVERTISED PRICES

MOTOROLA

UMAX®

PowerComputing™

DAYSTAR® DIGITAL

PRINTERS

APPLE COLOR 12/660	$5599
APPLE LW 4/600-12/640	$850/1435
APPLE SW 1500	$259
APPLE SW 2200/2500	$395/335
EPSON STYLUS COLOR PRO XL	$1350
HEWLETT PACKARD 6MP	$899

NewGen Printers

NEWGEN

DXpress6	600dpi/11x18/16ppm	$2550
DXpress+12	1200dpi/11x18/16ppm	$4350
DXpress12	1200dpi/12x25/16ppm	$4899
Design XP6	600dpi/11x18/16ppm	$2150
Image+12XF	600dpi/11x17/8ppm	$4150
ChromaxPro	300dpi/12x19/Color	$13450

POWERMAC 9500/9600

9600/200MP	32/4GB/12xCD/kb	$4350
9600/233	32/4GB/12xCD/kb	$3530
9600/200	32/4GB/12xCD/kb	$3295
9600/200	32/2GB/12xCD/ATI2MB	$2995
9500/200	32/2GB/8xCD/ATI	$CALL
9500/180MP	32/2GB/CD/ATI	$2995
9500/150	32/2GB/CD/ATI	$CALL

POWERMAC 8500/8600

8600/200	32/2GB/12x/Zip/kb	$2975
8500/180	32/2GB/8xCD/L2	$2695
8100/110	16/2GB/CD	$1795

POWERMAC 7200/7600/7300

7300/200	32/2GB/12x/kb	$2295
7300/180	16/2GB/12x/kb	$1895
7600/132	16/1GB/8xCD	$CALL

POWERMAC 4400/6500

6500/300 603e	32/4GB/12CD/33.6	$CALL
6500/250 603e	32/4GB/12X/33.6/ZIP	$2099
6500/225 603e	32/3GB/12X/33.6	$1799
4400/200 603e	32/2GB/12X/33.6	$1799
4400/200 603e	16/1GB/8X	$1499

POWER BOOKS

3400c/240	32/3GB/CD/33.6	$5750
3400c/200	16/2GB/6x	$4695
3400c/180	16/1.3GB/6x/33.6	$4195
1400c/133	16/1GB/6x	$2499
1400cs/117	16/750/CD	$1799
1400cs/117	12/750	$1495
Duo 2300c refurb	20/1GB/mod	$1295

PERFORMA

6400/200 refurb	16/2.5/8xCD/28.8/kb	$1299
6360/160	16/1.2/CD/28.8/kb	$1099
5400/180	16/1/CD/KB/mon	$1299

MONITORS

APPLE 15"/15"AV	$375/469
APPLE 1705/1710 17"	$649/850
APPLE 20"	$1695
SONY 100SX/200SF	$439/749

APPLE PARTS

1.44 SUPER FLOPPY DRIVE	$159
9500/8100-110 LOGIC BOARD	$650/895
180/200 MHz PROCESSOR	$599/799

We can match an advertised price

SOFTWARE/ADD-ON'S

ADOBE PHOTOSHOP 4.0	$349
ADOBE PAGEMAKER 6.5	$349
ADOBE ILLUSTRATOR 6.0	$299
ADOBE PREMIERE 4.2	$299
ADOBE AFTER EFFECTS 3.1	$299
ADOBE PROD. BUNDLE	$1137
ADOBE STREAMLINE	$129
MS OFFICE PRO 4.2.1	$349
MACROMEDIA FREEHAND 7.0	$299
QUARK XPRESS	$639
QUARK PASSPORT	$1350
YAMAHA 6X4X CDR/Toast	$775
JVC 2X4X CDR/Toast	$399
IMS TWIN TURBO 4MB	$299
IMS TWIN TURBO 8MB	$550
MIRO MOTION DC 20 PCI	$650
MEDIA 100QX	$1950
8MB DIMM	$59
16MB DIMM	$89
32MB DIMM	$179
64MB DIMM	$339
2.1GB HARD DRIVE	$359
4GB HARD DRIVE	$695
9GB HARD DRIVE	$1495
23GB HARD DRIVE	$3595
10/100 BASE T	$179
APPLE 586/100 DOS CARD	$550
SONY DDSII 4-8GB Ext	$899

For up-to-date pricing and custom configuration, see our web-site at: http://www.wcn.com. or E-Mail us at WCN@Earthlink.net Not responsible for typos.

Fortune 500 • Schools • Government • International Orders, Visa, MC & Amex welcome. Subject to change w/o notice & limited qty. All prices are COD. All other forms of payment are 3% higher. Prices subject to change without notice.

Celebrating 10 Years in Business

Experienced Staff • Huge Inventory • Guaranteed Low Prices

www.digicore.com

ABOVE COST

SOFTWARE SPECIALS

MS Office	V4.21	259
Freehand	V7.0	289
Illustrator	V6.0	329
Pagemaker	V6.5	345
PhotoShop	V.4.0	375

VIDEO CARDS

ATI Xclaim GA (2 Meg)	219
IMS TURBO 4 Meg	225
ATI Xclaim VR (4 Meg)	289
#9 Imagine 128 (4 Meg)	299
Radius PC 24/1600	399
IMS TURBO 8 Meg	499
Miromotion DC20	585
Thunder 30/1600	675
#9 Imagine 128 (8 Meg)	725
MiroMotion DC30	865
Thunder Color 30/1600	1899
Targa 2000 PCI	2950

Modems

Supra 33.6 MacnFax	119
Global Village 33.6	159
Motorola 33.6 PC	193
US Robotics Sportster 56K	215
Sportster 33.6 w/voice	249
Global Village 33.6 PC	265
GV Platnum Pro PC	415

Storage

Iomega Zip Drive	189
Quantum 1 GB 3.5"	249
La Cie 1.2 Quantum Ext.	325
La Cie 2.1 Quantum Ext.	399
Iomega Jaz Drive	449
2.2 GB Quantum Atlas	499
4.3 GB Seagate	765
La Cie 4.3 AV IBM Ext.	825
La Cie 9GB AV Ext.	1699
9 GB Seagate	1869
9 GB AV Micropolis	2050
17.2 GB Raid (6 Drives)	5425

CONTROLLERS

Atto Express PCI	319
PCI JackHammer Card	365
Atto Silicon Express	2425
FWB Dat's & Arrays	CALL

RCD & Optical

Fujitsu Dynamo 640	629
Pinnacle Tahoe 640	659
Pinnacle RCD 4x4	925
Yamaha CD 4X6 w/Toast	845
FWB Hammer Dat 8000	1199
Pinnacle Vertex 2.6 GB	1359
Apex 4.6 Gig Optical	1499

Slide Scanners

SprintScan 35 LE	699
SprintScan 35 +	699
Nikon CoolScan LE II	1149
Nikon SuperCoolScan	1599
SprintScan 45	1849

Cameras

Color Quick Cam	189
Kodak DC 20 Camera	269
Epson PhotoPC	399
Kodak DC 30 Camera	799
Olympus D300L	865

APC Protection

Personal SurgeArrest	19
Professional Surge Arrest	29
Back-Ups 280	129
Back-Ups Office 250	159
Back-Ups Pro 280	179
Back-Ups Pro 650	325
Back-Ups Pro 1000	427

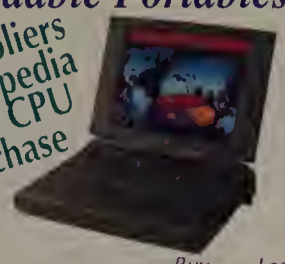
www.digicore.com

•Se Habla en Espanol
•Nihongo demo Do-zo

POWERBOOKS

Affordable Portables

Free Groliers Encyclopedia w/any CPU Purchase



	Buy	Lease
1400cs/117 12-750	1499	51
1400cs/117 16-750 CD	1785	60
1400c/117 16-1gig CD	2199	74
1400c/133 16-1gig CD	2855	96
3400c/180 16-1.3GB	3965	134
3400c/180 16-1.3GB CD	4375	147
3400c/200 16-2GB CD	4799	162
3400c/240 16-3GB CD	5775	195

Call US for Any Unlisted Products

Memory

Simm's • Dimm's • PowerBook
CALL - Guranteed • Lowest Price
LIFE TIME WARRANTY

PRINTERS

StyleWriter 1200 (R)	115	4
StyleWriter 2400 (R)	219	7
StyleWriter 1500	265	9
Epson Color Stylus 600	289	10
Color StyleWriter 2500	329	11
Color SW Portable 2200	369	12
Epson Color Stylus 800	419	14
HP 870cxi	479	16
LaserWriter 4/600 PS	875	29
HP 6MP	885	30
GCC Elite 600 ET	1150	39
LaserWriter 12/640	1450	49
Epson Color Stylus Pro XL	1385	47
HP 5M	1699	57
LaserWriter 16/600	2099	71
HP 4MV	2635	89
GCC XL 1208	3795	128
Color LW 12/660	5299	179

Scanners

	Buy	Lease
Microtek E3	199	7
Umax Astra	279	9
Agfa SnapScan 600 DPI	299	10
Umax Vista S12 LE	489	17
Umax Vista S6E w/full PS	549	18
Microtek E6	539	18
Apple ColorOne 600/27	565	19
Umax Vista S12 LE	649	22
Apple ColorOne 1200/30	775	26
Epson Expression Exec.	839	28
HP ScanJet 4C	899	30
Agfa Arcus II w/transp.	1519	51
Microtek ScanMaker III	1379	46
Umax PowerLook II Pro	1270	43

POWERMACS

We can Custom Configure any System to meet Your Needs

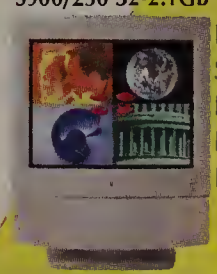
		Lease
4400/200,16- 2GB CD	1485	50
4400/200,32-2GB-CD	1825	62
4400/200 PC Compat.	Call	Save
6400/200 16/2.4GB CD	1525	51
7300/180,16-2GB CD	2050	69
7300/200,32-2GB CD	2399	81
6500/225 32-3GB-CD-Mdm	1785	60
6500/250 32-4GB-CD-Zip/M	1985	67
6500/250 - Business Bundle	2399	81
6500/300,64-4GB-CD-Zip-M	2625	88
8600/200,32-2GB CD	2899	94
9600/200,32-4GB CD	3250	110
9600/200MP 32 4GB CD	4099	138

MOTOROLA

	Buy	Lease
3000/180 DT 16-1.2GB 8xCD	1239	42
3000/180 MT 32-2.5GB 8xCD	1375	46
3000/200 DT 16-1.2GB 8xCD	1465	49
3000/200 MT 32-2.5GB 8xCD	1655	56
3000/240 MT 32-2.5GB 8xCD	2060	69
4000/160 DT 16-1.2GB 8xCD	1479	49
4000/160 MT 32-2.5GB 8xCD	1665	56
4000/200 DT 16-1.2GB 8xCD	2130	72
4000/200 MT 32-2.5GB 8xCD	2329	79

UMAX

	Buy	Lease
C500/180 16/1.2GB 8xCD	1125	38
C600/200 16/1.2GB 8xCD	1575	53
C600/240 24/2.1GB 8xCD	1820	61
J700/180 24/2.1GB 8xCD	2299	77
S900/180 32-2.1GB 8xCD	2699	91
S900/200 32-2.1GB 8xCD	2995	101
S900/225 32-2.1GB 8xCD	3345	113
S900/180 DP 32-2.1GB 8xcd	3345	113
S900/200 DP 32-2.1GB 8xcd	3999	135
S900/250 32-2.1GB CD-Zip	4499	152



Radius • SuperMac
Sony • NEC • Apple
Phillips • Viewsonic
Nokia • CTX • Sanyo
Nanao • Hitachi...

Monitors

	Buy	Lease
Sony 15" 100SX	379	13
Apple 15" AV Display	425	15
Apple MultiScan 1705	599	20
RaterOps MC600 17"	599	20
Sony 17 200SX MultiScan	649	22
Sony 17 200SF MultiScan	729	25
ViewSonic 17" PT770	749	25
Nec XV 17+ Monitor	749	25
Nec M700 17"	799	27
AppleVision 1710	735	25
AppleVision 1710AV	835	28
Portrait Pivot 17"	859	30
Raster Ops MC 20	1285	43
Radius PressView 17SR	1850	62
Sony 300SFT 20"	1625	55
Apple 20" Multiple Scan	1650	56
ViewSonic 21" PT813	1699	57
RasterOps MC801 HR	1959	66
Radius PressView 21SR	2765	93

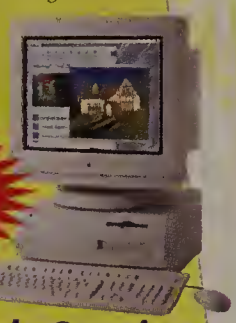
Huge Savings on Over 2600 Available Mac Products

Sales & Leasing

Lease $60 per mo

4400/200 Starter

PowerMac 4400 16-2 Gig CD
15" MultiScan Monitor,
Ext. Keyboard
Sale Price.....$1785
Add $99 to Upg, to 32 Meg.



Lease $81 per mo

7300 Work Station

PowerMac 7300/180, 16-2 Gig CD
15" MultiScan Display .26 DP
Apple Extended Keyboard
Sale Price.....$2399
Add $125 for 33.6 Fax/Modem

Lease $132 per mo

8600 "AV" Station

PowerMac 8600/200 32/2 Gig HD
Apple 1710 AV Monitor
Apple Ext. Keyboard & Zip Drive
Sale Price.....$3899

GE On-Site Service Available for any Systems

DiGiCore

We will Beat any Verified Competitors Price+

Order Toll Free

800-858-4622

International & Dealers 818-785-2800

24 hr FaxLine 818-785-3100

International E-Mail
sales@digicore.com

All Major Credit Cards • CODs
Wire Transfers • Corporate POs

C.O.D.

Open 7am - 6pm M-f & 7am to 12pm Sat. Pacific Time•
Due to publication time constraints prices may vary •
Call Us for the Lowest and Most Current Price •
Lease Payments based on 36 Mo. O.A.C. •
Leasing is Available to Approved Business & Individuals •
All Prices Reflect COD Discount & Subject to Availability •
Possible Restocking Fee on Non-Defective Returns •
All Returns/Repairs require an RMA Number •

DigiCore Inc. 15500 Erwin St • Van Nuys CA 91411

APS TECHNOLOGIES:®

HIGH-PERFORMANCE AT THE LOWEST PRICES!

Call 800-945-4920 • 24 Hrs x 7 Days a Week

Software Now Included FREE with APS M•POWER systems

- Claris Works®
- Claris Organizer™
- Claris Home Page®
- Macintosh System 7.5.3 or later
- Nisus® Writer 4.1
- PowerMerge LE
- DiskFit Direct™
- QuickMail™ Express
- Web Arranger 30-day trial
- QuickKeys 30-day trial
- America On-Line

All **M•POWER** systems are shipped complete with a floppy drive, ADB keyboard, ADB mouse, printer port, modem port, ADB port, SVGA monitor port (supporting 14", 15", 17" & 21" monitors), 2 PS/2 ports, SCSI port, IDE bus, ATAPI bus, 16-bit sound output port, rear headphone jack and a microphone jack to make computing much more enjoyable. All **M•POWER** systems are ready to grow with you – the **M•POWER** 603e180 and the 603e200 desktop systems have four internal bays, while the **M•POWER** 603e240 and the 604e200 tower systems have eight internal bays. These features and many more make the APS **M•POWER** system the best value in the market today.

**Monitors sold separately. Filling all available drive bays may exceed power limitations.*

604e200	◆◆◆◆ MacWEEK
603e245	◆◆◆◆ MacWEEK
603e200	◆◆◆ MacWEEK
603e180	◆◆◆ MacWEEK

M•POWER 604e200

$1899*

Part #7100-STDH

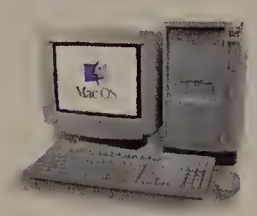
Includes:
- 12X CD-ROM
- 24MB of DRAM
- 2.5GB Hard Drive
- Floppy Drive
- 2MB of VRAM
- 512K L2 Cache
- ADB Keyboard & Mouse
- 2-Year Limited Warranty
- Optional 5-Year Service Contract

Mini-Tower Model
- Three 5.25" Internal Bays
- Four 3.5" One-inch High Int. Bays
- Five PCI Expansion Slots

M•POWER 603e240

$1799*

Part # 7008-STD



Includes:
- 12X CD-ROM
- 24MB of DRAM
- 2.5GB Hard Drive
- Floppy Drive
- 1MB of VRAM
- 512K L2 Cache
- ADB Keyboard & Mouse
- 2-Year Limited Warranty
- Optional 5-Year Service Contract

Mini-Tower Model
- Three 5.25" Internal Bays
- Four 3.5" One-inch High Int. Bays
- Five PCI Expansion Slots

M•POWER 603e200

$1599*

Part # 7000-DLXI

Includes:
- 12X CD-ROM
- 24MB of DRAM
- 2.5GB Hard Drive
- Floppy Drive
- 1MB of VRAM
- 256K L2 Cache
- ADB Keyboard & Mouse
- 2-Year Limited Warranty
- Optional 5-Year Service Contract

Desktop Model
- Two 5.25" Internal Bays
- Two 3.5" Internal Bays
- Three PCI Expansion Slots

Mini-Tower Model
- Three 5.25" Internal Bays
- Four 3.5" One-inch High Int. Bays
- Five PCI Expansion Slots

M•POWER 603e180

$1199*

Part # 7006-STD

Includes:
- 12X CD-ROM
- 16MB of DRAM
- 1.2GB Hard Drive
- Floppy Drive
- 1MB of VRAM
- ADB Keyboard & Mouse
- 2-Year Limited Warranty
- Optional 5-Year Service Contract

Desktop Model
- Two 5.25" internal bays
- Two 3.5" internal bays
- Three PCI Expansion Slots

Mini-Tower Model
- Three 5.25" Internal Bays
- Four 3.5" One-inch High Int. Bays
- Five PCI Expansion Slots

Microsoft is a trademark of Microsoft Corporation. Mac OS is a registered trademark of Apple Computer, Inc. M•POWER is the trademark of Alliance Peripheral Systems, Inc. APS and APS Technologies are registered trademarks of Alliance Peripheral Systems, Inc. Sony is a registered trademark of Sony Corporation. Other brand or product names are registered trademarks or trademarks of their respective holders.

THE NAME TO REMEMBER IN MAC COMPATIBLE PRODUCTS™

APS HIGH-PERFORMANCE ULTRA SCSI DRIVES

Model	Description	Int.	SR 2000	APS Pro
APS Q 1280	Quantum Fireball TM, 1222MB, 4500 rpm	$229.95	$279.95	N/A
APS Q 2100	Quantum Fireball TM, 2014MB, 4500 rpm	299.95	379.95	N/A
APS Q 3200	Quantum Fireball TM, 3067MB, 4500 rpm	349.95	399.95	N/A
APS WD 2000	Western Digital Enterprise, 2077MB, 7200 rpm	549.95	599.95	N/A
APS I 4300	IBM DCAS - 34330, 4134MB, 5400 rpm	599.95	649.95	N/A
APS WD 4300	Western Digital Enterprise, 4157MB, 7200 rpm	799.95	849.95	$899.95
APS Q 4300	Quantum Atlas II, 4341MB, 7200 rpm	849.95	899.95	949.95
APS ST 4300	Seagate Barracuda, 4148MB, 7200 rpm	N/A	999.95	1099.95
APS MS 4300 AV	Micropolis 4345AV, 4240MB, 7200 rpm	999.95	1049.95	1099.95
APS Q 9000	Quantum Atlas II, 8682MB, 7200 rpm	1449.95	1499.95	1549.95
APS MS 9000 AV	Micropolis 3391AV, 8669MB, 7200 rpm	1549.95	1599.95	1649.95

APS ULTRA WIDE SCSI DRIVES*

Model	Description	Int.	SR 2000	APS Pro
APS WD 2000 W	Western Digital Enterprise, 2077MB, 7200 rpm	$599.95	$649.95	$699.95
APS WD 4300 W	Western Digital Enterprise, 4157MB, 7200 rpm	849.95	899.95	949.95
APS Q 4300 W	Quantum Atlas II, 4341MB, 7200 rpm	949.95	999.95	1049.95
APS MS 4300 WAV	Micropolis 4345 AV, 4157MB, 7200 rpm	1099.95	1149.95	1199.95

APS IDE DRIVES

Model	Description	Int.	SR 2000	APS Pro
APS WD 3000	Western Digital Caviar, 3020MB, 5200 rpm	$299.95	N/A	N/A
APS I 4000	IBM DCAA-34330, 4134MB, 5400 rpm	499.95	N/A	N/A
APS I 2.1	IBM 2.5 17mm DCRA-22160, 2067MB, 4900 rpm	599.95	N/A	N/A

APS POWERBOOK STORAGE

Model	Description	Int.	SR 2000	APS Pro
APS PowerBook Drive	IBM DSOA-21080, 1080MB, 4000 rpm w/ SCSI converter card	$599.95	N/A	N/A

APS REMOVABLE DRIVES

Model	Description	Int.	SR 1000	SR 2000
APS SQ 5200	SyQuest 5200, 190MB	N/A	N/A	$389.95
APS Jaz	(with 1 cartridge) 1GB	N/A	$399.95	399.95
APS Jaz	(with 4 cartridges) 1GB	N/A	699.95	699.95

APS MO DRIVES

Model	Description	Int.	SR 1000	SR 2000
APS 230 MO	(with 1 cartridge) 217MB	N/A	$299.95	$379.95

APS CD-ROM DRIVES

Model	Description	External
APS CD12	12X CD-ROM in Slimline Case	$159.95*
APS CD-R	2X record/6X read CD-R (Phillips)	499.95
APS CD-R Plus	2X record/6X read CD-R (Sony)	499.95
APS CD-R Pro	4X record/6X read CD-R in Pro Enclosure	899.95
APS CD-R Pro	4X record/6X read CD-R in Full Height Enclosure	999.95
APS Jaz/CD-R System	2X record/6X read CD-R	999.95

Available in an SR 2000 Enclosure for an additional $100.00

APS TAPE BACKUP SYSTEMS

Model	Description	Internal	External
APS HyperQIC™	Travan 4 Conner QIC 3095, 8GB	$349.95	$399.95
APS HyperDAT®	DDS-2DC, 8GB	749.95	799.95
APS HyperDAT® Pro	DDS-2DC, 8GB	849.95	899.95
APS HyperDAT® III	DDS-3DC, 24GB	1149.95	1199.95

■ *Red indicates either new price or product*

- *30-day money-back satisfaction on all APS brand drives and accessories. Your risk is the cost of shipping. 30-day money-back guarantee does not apply to MPOWER systems. Two year limited warranty on MPOWER systems. Monitors carry separate warranty from their respective manufactures.*
- *SCSI cables sold separately.*
- *Drive-for-Drive Repair or Replacement Warranty. APS will, at its discretion, replace or repair products found to be defective according to the terms of the product's warranty.*
- *Refused orders subject to 20% restocking fee*
- *International customers must pay for all shipping charges.*
- *Listed capacities are formatted.*
- *Actual data compression and tape capacity vary greatly depending on the type of data recorded, other system parameters and environment.*
- *Prices and specifications are subject to change without notice.*
- *You need to install system software appropriate to your machine before using our hard drives.*
- *Not responsible for typographical errors*
- *© 1997, Alliance Peripheral Systems, Inc. All Rights Reserved.*

Computer case may not exactly match images shown.

WHILE SUPPLIES LAST – 1.2GB ONLY
APS Q 1280

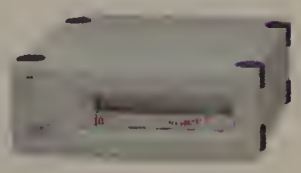
- High Performance
- Dependable Quantum Mechanism

Delivering superior performance from its Ultra SCSI interface, the APS Q 1280 is an excellent choice in any demanding desktop storage environment. Its sustained reads of up to 3.90MB/second and writes of up to 3.80MB/second make it well-suited for just about anything.

ICE Quantum

$229.95
Internal configuration

1GB REMOVABLE DRIVE!
APS JAZ



- Hard drive performance
- Huge 1GB capacity on removable media

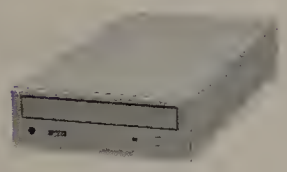
Jaz has changed the removable storage market forever! The performance of the APS Jaz rivals that of most fixed-platter hard disk drives.

ICE

$399.95
Includes ONE cartridges

APS Jaz drive with 4 cartridges $699.95

STEAL THIS 12X CD-ROM!
APS CD 12



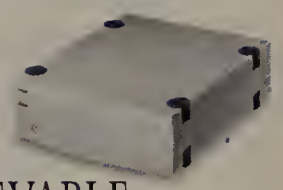
- High performance 12X CD-ROM drive
- Great value for home and office use

Smooth full-screen video output, the 12X performance of the APS CD12 supercharges any CD-ROM application! At this incredibly low price, you can hardly afford to live with that old 2X or 6X CD-ROM drive.

**Slimline case does not include DATerm, but does come with block terminator.*

$159.95
*External configuration Slimline case**

4 GIGS – UNBELIEVABLE PRICE!
APS I 4300



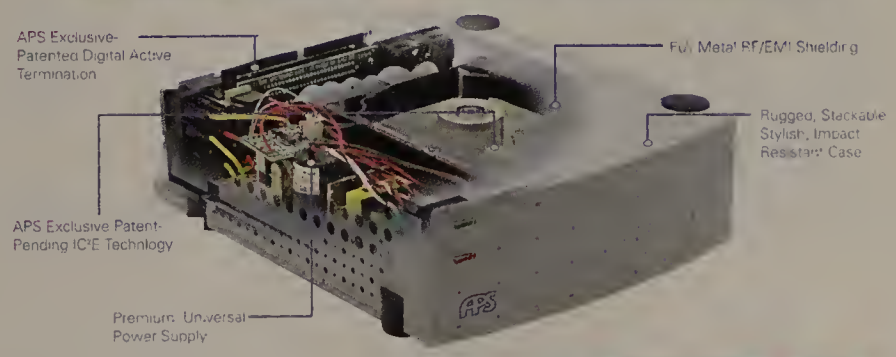
- 5400 rpm, Ultra SCSI mechanism
- Best mix of price and performance

This workhorse delivers 4GB of high-performance data storage. Don't let its low cost fool you, this drive is truly a thoroughbred, delivering sustained reads of up to 6.4MB per second and sustained writes of 7.3MB per second. The drive features MR heads and a digital PRML channel.

ICE IBM.

$599.95
Internal configuration

APS DRIVES: THERE IS A DIFFERENCE



APS® Technologies

VISA MasterCard DISCOVER NOVUS TeleCheck

Call 800-945-4920

Visit our Web Page at http://www.apstech.com/
International Sales: (816) 920-4109

Ref. No. 281000

Circle 62 on reader service card

radius™ Quantities are Limited...

AWARD WINNING PRODUCTS

20/19 INCH TRINITRON $999

TWENTY ONE INCH DISPLAYS

21 Inch DiamondTron Monitor $1499
- Rated Superior to Trinitron
- 2 year Mfr's Warranty on some models
- Largest Aperture Grille monitor available
- Up to 1600x1200 on Macs and PCs
- Full Digital Control from Keyboard

PressView Series from $1599

Radius PressView 21sr	from $2899
Mitsubishi 21 Diamond Scan	$CALL
NEC 20" & 21" Displays	$CALL
Radius PrecisionColor Display 21	$1499
RasterOps SuperScan MC 21	$CALL
Radius Multiview 21 & PrecisionView 21	$CALL
Radius SuperMatch 21 TXL	from $1599
Radius 21 inch Grayscale Display	$799

TWENTY INCH DISPLAYS

TRINITRON BLOWOUT-LOWEST PRICE EVER! $899
While Supplies Last! With accelerated 24bit NUBUS card!

20" SONY Trinitron Technology
- Industrial Grade CRT
- Two page WYSIWYG output

ViewSonic 20" monitors	$CALL
SuperMac SuperMatch 20 Plus	$999
Radius PrecisionColor 20v	$1299
Digital 20 inch Display Up to 1280x1024	$1399
RasterOps 20 Multimode	$1299
Radius PrecisionColor 19	$899
Apple Multiple Scan 20 Display	$CALL
SuperMac Trinitron With accelerated 24bit NUBUS card!	from $1099
Radius 20 inch Grayscale Display	$699

Radius IntelliColor Display 20 $1499
- MacUser, MacWorld, MacWeek Editor's Choice
- 1600x1200 to 640x480

SEVENTEEN INCH DISPLAYS

SuperMac SuperMatch 17 $499

SuperMatch 17T TRINITRON	$699
PrecisionColor Display 17	from $899
PrecisionView 17	$CALL
Radius PressView 17sr	$CALL
SuperMac/E-Machines T16IImr	from $599

PORTRAIT/PIVOT DISPLAYS

Radius Pivot Display $199

Radius Color Pivot w/Video Card for SE/30, LC,LCII, or NUBUS	$399
PrecisionColor Pivot	$599
Color Pivot LE	$299
Radius Full Page Display	$299
Apple Portrait Display	$399
Portrait Display Labs 1700	$CALL
E-machines ColorPage 15 with NUBUS card	$299

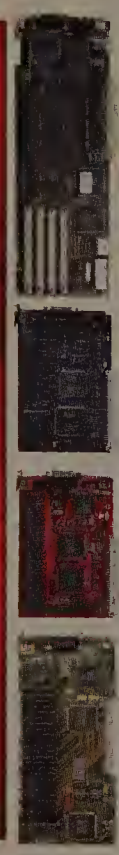
4 YEAR EXTENDED WARRANTY AVAILABLE

24 BIT COLOR $150

1600x1200 PCI & NUBUS

IMS Twin Turbo 128M ♦♦♦♦MacWEEK from $199
- 1600 x 1200 to 640 x 480 resolutions
- MPEG video playback
- 128-bit wide architecture
- 2MB Interleaved VRAM, upgradeable to 4MB

HARD TO FIND NUBUS CARDS IN STOCK!



IMS Twin Turbo 128M-4MG	$299
Radius Thunder II & IV GX Cards	$BELOW COST
Radius Thunder 3D	$CALL
Radius ThunderColor 30/1152 & 1600	$CALL
Radius ThunderPower 30/1920	$CALL
Radius PrecisionColor 8/1600	$399

21" RESOLUTIONS

Radius 24-bit cards	from $399
Radius PrecisionColor 24X	$599
Thunder 8 "Fastest 8 bit card ever"	$299
Thunder 24 & Thunder 24/GT*	from $499
SuperMac Ultura LX*	$499
RasterOps Horizon 24*	$599
RasterOps Prism GT	$CALL
Radius PrecisionColor 8XJ	$499

*DSP Available

20/19" RESOLUTIONS

Radius 24-bit cards	from $189
SuperMac Spectrum 24 Series V	$399
Radius PrecisionColor Pro 24XK	$CALL
SuperMac Futura MX	$199
RasterOps PaintBoard Lightning	$CALL
SuperMac Spectrum 8	$99
PowerView/SuperView for Powerbooks	$199/$299

17/16" RESOLUTIONS

Radius 24-bit video cards	from $150
Radius PrecisionColor Pro 24XP	$CALL
SuperMac Futura SX	$199
RasterOps 24 MX	$299

PHOTOSHOP ACCELERATION

Radius PhotoEngine from $389
- Four AT&T 3210 66MHz DSPs
- Accelerates Photoshop Filters
- Up to 15x acceleration on all Macs
- MacUser Editor's Choice
- Available in Daughtercard or NUBUS versions

Radius Photo Booster for Quadra/PDS or Rockets	from $199
SuperMac DSP daughter cards for Thunder/Ulturas	$199

COLOR CALIBRATORS

SuperMac Display Calibrator	only $199
SuperMac Display Calibrator PRO	$399
Radius Mac ProSense Calibrator	$799

600 DPI TABLOID $1999

QMS 860 Hammerhead from $1999
- 600 dpi 11 x 17
- Powerful RISC processor

Hewlett-Packard 4MV $2499

GCC Elite XL series 800dpi (11.6" x 20") from $2399

QMS 825/825mr from $399
- Canon Engine-8ppm
- Postscript Level 2
- Dual Paper Trays

EPSON, Hewlet-Packard, Umax Authorized Dealer

Ask about Printers available in 220v!

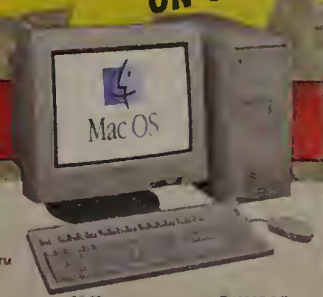
www.cra-sys.com

Supplies Won't Last... SUPERMAC RASTEROPS

STOP!! LOOK!! REBATES ON CPUs

AT OR BELOW DEALER COST!

AWESOME DISCOUNTS



UMAX SUPERMAC SERIES

•ON-SITE WARRANTY!!

	CPU ONLY	BUNDLE DISCOUNT*
C500/180 603e/180	$1349	from $1080
C600/180 603e/180	$1499	from $1332
C600/200 603e/200	$1799	from $1580
C600/240 603e/240	$2099	from $1753
J700/180 604e/180	$2499	from $2195
S900/180 604e/180	$3199	from $2810
S900/200 604e/200	$3399	from $2985
S900/233 604e/233	$4199	from $3890
S900/180DP 604e/180	$3899	from $3424
S900/200DP 604e/200	$4499	from $4021

FREE ClarisWorks, Netscape Navigator & Internet Access with every CPU purchase !!

MOTOROLA SERIES

StarMax™

•5 YEAR WARRANTY!!

	CPU ONLY	BUNDLE DISCOUNT*
3000/180DT 603e/16/1.2GB/Modem	$1249	from $1216
3000/180MT 603e/32/2.5GB/Modem	$1395	from $1355
3000/200DT 603e/16/1.2GB	$1299	from $1268
3000/200MT 603e/32/2.5GB/Modem/8xcd	$1799	from $1629
3000/200MT 603e/32/2.5GB/Zip/10BaseT	$1999	from $1851
3000/240MT 603e/32/2.5GB/Modem/8xcd	$2299	from $2062
3000/240MT 603e/32/2.5GB/Zip/10BaseT/16xcd	$2499	from $2222
4000/160MT 604e/32/2.5GB/Modem/8xcd	$1899	from $1764
4000/200MT 604e/32/2.5GB/10BaseT/8xcd	$2699	from $2365
4000/200MT 604e/32/4.3GB/Zip/10BaseT/16xcd	$3099	from $2714

PRICES CHANGE FREQUENTLY - CALL FOR TODAY'S BEST DEAL!!

APPLE SYSTEMS

PCI MAC

	CPU ONLY	BUNDLE DISCOUNT*
4400/200MHz	$1699	from $1445
7200/120	$1349	from $1175
7300/180	$2299	from $1980
8600/200	$3199	from $2999
9600/200	$3699	from $3280
9600/200MP	$4699	from $4088
7600/132	$1999	from $1799

Bundle Discount Prices available with qualifying monitor purchase !!

APPLE SYSTEMS

NUBUS MAC

	CPU ONLY	BUNDLE DISCOUNT*
6100/60	$979	from $795
6100/66	$999	from $799
7100/66	$1299	from $949
WG6150	$1445	from $1249
7100/80	$1399	from $1049
8100/80	$1699	from $1325

Bundle Discount Prices available with qualifying monitor purchase !!

GUARANTEED LOWEST PRICE ON ALL DIGITAL VIDEO!

TRUEVISION Targa 2000
- 16-bit audio up to 48KHz
- NTSC: 30 frames/60 fields per second,
- Supports PAL broadcast standards

NEVER UNDER SOLD!!

Targa 2000 Pro $CALL

Media 100 Products $CALL

Video Vision Studio, PCI and Nubus
- 24bit Full-Screen, Full-Motion Video
- Includes Adobe Premiere and VideoFusion
- Breakout bar supports dual input

CALL FOR BEST PRICE!! $INSTOCK!

Video Vision Studo Array 4-12GB

Radius Spigot Pro AV $699
- 24bit Full-Screen, Full-Motion Video

Radius Spigot Power AV $499

Video Vision Telecast PCI/Nubus Compare at $4999 $2999
- Full-motion, broadcast-quality video
- Available as upgrade for Video Vision Users

Spigot II Tape *Now Bundled with Adobe Premiere* $399

VideoSpigot Cards Nubus/LC/IIsi from $99

BEST DIGITAL VALUE ANYWHERE!

Full Digital Video Workstation for les$ than a PCI Digital Video card alone!!

SAME TECHNOLOGY FOR HALF THE PRICE!!

RADIUS 81/110
32/2GB AV Drive/CD with Video Vision

only $2998

PowerMacs from $799

EarthLink Network

SET-UP WAIVED! 15 FREE DAYS

CRA SYSTEMS

New and Factory Recertified Models of Most Items Available

CRA Systems, Inc.
300 South 13th St., Waco, TX 76701
Monday thru Friday 9AM to 7PM CST Saturday 10AM-4PM *Sales Dept.Only*
Domestic Sales sales@cra-sys.com Fax 817.750.9050
Consultants/Dealers 817.754.2120 International Sales 817.754.2120
Prices reflect 2% cash discount. Prices subject to change. Not liable for typographical errors. All shipping charges for COD orders to be secured by credit card. Dealers and consultants call for quantity pricing. We ship anywhere. FedEx

DEALER AND EDUCATIONAL DISCOUNTS AVAILABLE ON MOST ITEMS!

800/375-9000

Circle 20 on reader service card

MacConnection®

The Original Macintosh Mail-Order Source–Since 1984!

Get the Best for Less!

UPGRADE!

Director 6 Multimedia Studio
New Version!
Just drag and drop to add interactivity and animating!
Upgrade Only $479.95
39563

Adobe Photoshop 4 **NEW!**
New Features!
New Filters!
New Special Effects!
Upgrade Only $134.95
32923

Only at MacConnection!
Buy MacOS 7.6 and Quicken Deluxe together, and save $10 INSTANTLY on Quicken Deluxe!
Only $118.95
39211

Adobe PageMaker 6.5
Exclusive Offer! Get Pantone ColorWEB FREE w/Purchase!
Upgrade Only $94.95
32846

Epson Stylus Color 800 Inkjet Printer

Incredible LOW PRICE!

Revolutionary 1440 dpi output!

COLOR!

- Ultimate high-performance business printer
- 1440 x 720 dpi with MicroDot print technology!
- Optional internal Ethernet and LocalTalk

Only $449
37817

Save 100MB of Stuff at a Time...and Save Money, Too!

Includes FREE 100 MB Zip Disk

Zip gives you hard drive-like performance with unlimited storage potential!

Now Only $149.95
19171

- Dependable, fast, and easy to use
- Stores up to 100MB
- Easily transportable–weighs about a pound
- Comes with FREE Zip tools software
- Transfer rate of up to 1.25MB/second

New Low Price!

Sony Multiscan 100sx Trinitron

SONY

Quality Performance at an Entry-Level Price

Only $379

- 15" Trinitron CRT
- Digitally controlled Multiscan technology
- Supports resolutions up to 1024x768 @ 75Hz

34919

Peripherals!

NEW! **Kodak DC120!**
39582
First high-res digital camera under $1000! Dazzling 1.2 million pixel images! 3x zoom for more detailed closeups!
Kodak digital science SOLUTIONS
Only $999

PRACTICAL PERIPHERALS®
33.6Kbps MiniTower Faxmodem
Up to 134,400 bps maximum throughput! Place horizontally or vertically to save space!
Only $94.95* 33105
*Price after $20 mail-in rebate (expires 6/3/97)

Only $429
39581
Microtech RoadRunner 1GB Hard Drive Upgrade
Get a huge GB of internal, portable storage! Revive your PowerBook for as little as $429!
MICROTECH

Was $329
Now Only $199!
ScanMaker E3 for Mac
- Single-pass 24-bit flatbed scanning
- 300 x 600 dpi optical resolution; 4800 dpi max
- Legal size scanning area

26232
MICROTEK
Better Images Through Innovation.

NEW! **CommSlot II TWP Ethernet Card**
The high performance Ethernet connection for any Mac or Mac clone! No need to use PCI slots!
Only $79.95
sonic 39380

12X External LaCie SCSI CD-ROM Drive
Great for video, graphic, database, and multimedia applications!
LACIE LIMITED 36606
Only $219.95

Huge Price Drop! Save $100! 25826
The fastest graphics accelerator ever produced
INTEGRATED MICRO SOLUTIONS
Only $399

Microsoft FrontPage 1.0

Create Pro-Quality Web Sites with Ease!

- Use Wizards and templates to build entire sites
- Add tables and frames with the click of a button
- Much more!

$40 rebate for current Microsoft Office or stand-alone Office application users.

Only $142.95
Microsoft
37879

Amazing 1.5 GB!
SyJet Only $399
32593
More space than any other disk available! Less cost per megabyte, too!
SyQuest®

Fuji 20 Pack 100MB Zip Disks
As Low As $12.08 per disk
40425
Buy 20 Zip disks and get 4 FREE by mail!

Sportster 56K Faxmodem
FREE!
Fastest Modem Ever! Purchase at regular price and receive FREE Retrievelt! 2.5
Only $219.95
37317

BCS THE BOSTON COMPUTER SOCIETY
MacConnection was awarded "Best All Around Company" for the second year in a row by The Boston Computer Society!

BMUG SPRING 1995 CHOICE PRODUCT
The highly regarded Berkeley Mac Users Group (BMUG) named MacConnection the Best Mac Mail-Order Company.

OUR POLICY • VISA, MASTERCARD, AMERICAN EXPRESS, and NOVUS cards. No surcharge. • Most products are covered by manufacturer's warranty against defects for at least 30 days from the invoice date. • All returns require prior authorization; please call for an RMA • We are not responsible for typographical errors. • Pricing and promotions are subject to change without notice. **Continental U.S.:** Shipping Charges: $5 per order up to 10 pounds. On orders weighing 10 pounds or more, shipping is $1 per pound. Please call for weight/shipping charge information. Items of excessive size and/or weight may require additional days to deliver via a freight carrier. Please check with your sales rep for more details. Barring events beyond our control, all credit card orders phoned in weekdays by 3 a.m. ET will ship Airborne Express for delivery the next business day. Saturday delivery available to many areas upon request at no additional charge. Order all day Saturday thru noon Sunday for Monday delivery. Some areas require an extra day delivery. **APO/FPO, International orders and Hawaii, Alaska, Canada, Puerto Rico & U.S. Virgin Islands:** Shipping may require additional time and charges. All other areas: Call 603-446-4444 or FAX 603-446-7791 M-F 9 a.m.-5:30 p.m. ET. ©1997 PC Connection, Inc., Marlow, NH. MacConnection & the raccoon characters are registered trademarks of PC Connection, Inc. All other trademarks remain the property of their respective companies.

Just Released!

Power Mac 6500
250MHz • 12X CD-ROM • Zip Drive!

Authorized Catalog Reseller

The Small Business Macintosh!
- 250MHz
- 48MB RAM
- 12X CD-ROM
- 33.6 modem
- 2MB VRAM
- Built-in Zip Drive

Ultimate Software Bundle!
Microsoft Office (plus templates)
Now Up-to-Date & Contact
Norton Utilities
Front Office & FaxSTF
Apple Internet Connection Kit
and more...

Call for Pricing!

MOTOROLA
New Low Prices! on New StarMax Mac Systems!

Models can be configured with
- 240MHz 603e
- 32MB RAM
- 2.5GB HD
- 16X CD-ROM
- 4MB VRAM
- 100MB Zip Drive
- Mac OS 7.6
- 5PCI Expansion Slots
- 28.8 Modem
- 512K L2 Cache

plus some include hundreds of dollars of FREE Software!

Never before could you get so much for so little!

5 Year Warranty

STARTING AT ONLY $1249

Call Us First!

THE BEST PRICES ON MAC SYSTEMS!

800-800-MACs

While Supplies Last

UMAX®
SuperMac C500
Maximum Expandibility!
- 140MHz upgradeable 603e processor
- 16MB RAM • 1.2GB Hard Drive
- 8X CD-ROM • 1MB VRAM
- 2 PCI Expansion Slots
- Keyboard & Mouse

Monitor Sold Separately

ONLY $995 40533

SAVE ask about... **LEASING OPTIONS** for BUSINESS CALL FOR DETAILS

NEW! Extended Service Plan
Supplement the mfr.'s warranty for 4 full years from date of purchase!

The Fastest Portable on the Planet!
PowerBook 3400
- 12.1" Active Matrix
- 240MHz/603e
- 16MB RAM
- 3GB Hard Drive
- 12X CD-ROM
- 256K L2 Cache
- 1MB VRAM
- 33.6 Modem

Call for Pricing!

NEW PowerBook!

Authorized Catalog Reseller

Software!

Business		
37345	Mac OS 7.6 Upgrade	$69
36093	Mac OS 7.6 - CD	99
37159	ClarisWorks Internet Edition	99
27666	Claris FileMaker Pro 3.0 Upgrade	99.95
25476	Claris FileMaker Pro 3.0	199.95
32233	Intuit Quicken Deluxe CD	59.95
27057	Intuit QuickBooks Pro	199.95
37359	Niles & Assoc. EndNote/Endlink Mac	169.95
Edutainment		
29367	Apache	44.95
33350	Mega MathBlaster	46.95
38627	Family Tree Maker Deluxe Edition 2	84.95
Graphics & Design		
39385	MetaTools Kai's Photo Soap	49.95
38004	Extensis Winner Circle Bundle	199.95
36845	NetObjects Fusion	474.95
35801	Alien Skin Eye Candy	119.95
Utilities		
32164	SAM Symantec AntiVirus v4.5	69.95
33984	Connectix Speed Doubler v2	54.95
31151	Connectix RAM Doubler v2	54.95
38553	Insignia SoftWindows 95	344.95
37633	Casady&Greene Conflict Catcher v4	64.95
38102	Metroworks Codewarrior Gold	329.95
6748	Symantec Norton Utilities	95.95
34133	Aladdin Spring Cleaning	49.95
28320	Aladdin Stuffit Deluxe	72.95
12093	Dataviz MacLinkPlus/Translator Pro 9.0	89.95

Peripherals!

Accessories		
38599	Newton 2000 Kit	1099
37548	Newer MAXpowr 225	1199
25696	Kensington Mouse in the Box	39.95
39536	Kensington Orbit	69.95
Monitors		
34932	Sony MultiScan 300SF	1699
34338	NEC MultiSync P1150	1199
38127	ViewSonic PT813	1895
38174	Hitachi SuperScan MC600	649
Printers		
35047	Epson Photo PC 500	499
36306	GCC Elite XL608 Laser Printer	2399
31539	Canon BJC-4550 Bubble Jet Printer	499
Scanners		
40456	Visioneer PaperPort STROBE	329
37232	Calcomp Ultra Slate w/Live Picture SE	289.95
39628	Linocolor Jade Scanner	779
Storage		
19171	Iomega SCSI Zip Drive	149.95
30645	SyQuest EZ Flyer 230	249
36606	LaCie 12X CD-ROM	219.95
35470	Quantum 1.2GB Internal Drive	249
24697	Sony DG90M 10-Pack	69.95
Video		
40146	Digital Color Video Camera 2	189
37869	Twin Turbo TV	139
34427	MACXdaim 2M	229
33904	TView Gold	479
39214	TView Preso (PCMCIA)	189

SUPER LOW SIMMS!

1MB SIMMS as low as $16.95 1107

4MB	8MB	16MB	32MB
as low as $29.95	as low as $49.95	as low as $99.95	as low as $199.95

Order as late as 3 a.m. ET and *still* get Overnight Delivery!
FAX US AT: 603-446-7791

FREE! Catalog Subscription!
CALL TODAY!
☐ MacConnection ☐ PC Connection
Please check the catalog(s) you wish to receive
(Mention source code 797MW)
Name ____
Address ____ Apt ____
City ____ State ____ Zip ____

10,000 HOT PRODUCTS 24 HRS A DAY!

800-800-4396

www.macconnection.com
Now shop on-line with a name you can trust!

MACAD 797MW

MacWARE

Authorized Catalog Reseller

We carry over 6,000 products for your Mac! Plus a full line

1-Year On-Site Warranty

Monitor not included.

Jam-packed with 12 FREE software titles!

UMAX Computer Corporation

New Low Price! SuperMac C500 180MHz

180MHZ • 16MB RAM • 8X CD-ROM DRIVE • 1.2GB HARD DRIVE

NOW ONLY $1199! WAS $1349

SuperMac C500/180
Ask for Item # CPU 0590 WAS $1349 ..... $1199

SuperMac C600
180MHz/603e/1.2GB/16MB/8X CD
Ask for Item # CPU 0479 (w/28.8 modem) $1499
200MHz/603e/2.1GB/16MB/8X CD
Ask for Item # CPU 0478 (w/28.8 modem) $1699
240MHz/603e/2.1GB/24MB/8X CD
Ask for Item # CPU 0533 (w/28.8 modem) $1999

NEW! MICROTEK COLOR PAGEWIZ

COLOR DOCUMENT SCANNER

ONLY $159.95

Ask for item # INP 1160

MICROTEK Better Images Through Innovation.

SuperMac S900 Series

200MHz/604e/32MB/2.1GB/4MB VRAM
8X CD/6 PCI Slots
CPU 0378 was $3999 ..... NOW $3299

233MHz/604e/32MB/2.1GB/8X CD
6 PCI Slots/8MB VRAM
CPU 0609 ..... $4199

250MHz/604e/32MB/2.1GB/8X CD
6 PCI slots/8MB VRAM
CPU 0586 ..... $4999

MOTOROLA StarMax 3000/180

Desktop–16MB RAM/1.2GB HD/8X CD
Item # CPU 0619 ..... $1249
Mini-Tower–32MB RAM/2.5GB HD/28.8 DATA/FAX MODEM/8X CD
Item # CPU 0621 ..... $1395

AS LOW AS $1249! StarMax 3000/180 Desktop

MOTOROLA 5-YEAR WARRANTY

Monitor sold separately

StarMax 3000/200
Desktop–16MB RAM/1.2GB HD/28.8 DATA/FAX MODEM/8X CD
Item # CPU 0617 ..... $1299
Mini-Tower–32MB RAM/2.5GB HD/28.8 DATA/FAX MODEM/8X CD
Item # CPU 0623 ..... $1799

NEW VERSION! MACROMEDIA DIRECTOR 6

Upgrade for only $399.95

Ask for item # BND 1895

Director Multimedia Studio Upgrade
BND 1893. . . . $498.95
Qualifying products: Director 5 or earlier. Serial number required at time of order.

FREE Reelstills*
*While supplies last. Shipped in promotional packaging

ORDER ONLINE! and Get FREE Software!*

http://www.warehouse.com

Chose one of these software packages when you place an online order with MacWAREHOUSE!
*Limit one per customer.

3 Ways to Order:
1. Call: 1-800-434-3035
2. FAX: 1-908-905-9279
3. Online: http://www.warehouse.com

1. Our sales staff is ready to take your order 24 hours a day, 7 days a week.
2. We accept the following major credit cards: Visa, MasterCard, Discover Card/NOVUS, AmEx. Your credit card will not be charged until each item is shipped (no surcharge).
3. CT, IL, NJ, and OH residents add applicable sales tax.
4. Overnight delivery just $3.00 per order up to 3 pounds. For all orders over 3 pounds, shipping is $1.25 per pound or fraction thereof. (Example: shipping for a 4 pound order is $5.00)
5. Place your order for "in-stock" items up to 12:00 midnight(E) (weekdays), and we will ship same day for overnight delivery (barring system failure, etc.).
6. Many of our products come with a 30-Day Money Back Guarantee. All items we sell come with the MacWAREHOUSE 30-Day Guarantee Against Defects.

30 DAY Money Back GUARANTEE

30-DAY Guarantee Against Defects

© Copyright 1997 Micro Warehouse, Inc. MacWAREHOUSE® is a division of Micro Warehouse, Inc. MacWAREHOUSE® and MicroWAREHOUSE® are registered trademarks and Data Comm WAREHOUSE and MacSystems WAREHOUSE are trademarks of Micro Warehouse, Inc. Apple, the Apple logo, Mac and Macintosh are registered trademarks of Apple Computer, Inc. Item availability and price subject to change without notice. We regret that we cannot be responsible for typographical errors. All prices quoted in U.S. dollars.

100MB IOMEGA ZIP DRIVE

ONLY $149.95

LOWEST PRICE EVER!

Includes your first disk FREE!†

Ask for item # DRI 1050

Upgrade to NEW PAGEMAKER 6.5

for only $99.95

HTML File Import & Export!

Ask for item # UPG 0560

Trade-up from QuarkXPress for only $129.95! Ask for item # SID 0381.
Mail or fax us the title page of the user manual or a photocopy of the original program disk.

UPGRADE TO Microsoft Office 4.2.1

FOR ONLY $269.95

Ask for item # SID 0385

PLUS! Essential tools for small business

Microsoft Office: BUS 1015....$449.95

Adobe Illustrator 7.0

New! VERSION!

Upgrade for as low as $99.95*

Ask for item # BND 1953

FREE!

Plus...Get FREE Vertigo 3D Words when you buy Illustrator 7.0 now.

†Value based on Vertigo 3D Words sold separately as of this magazine printing. For use with Illustrator 7.0 only.

*Serial number required at time of order.

$99† Value

LOWEST PRICE EVER! 12X CD-ROM Drive

for only $199.95

PLUS...Get Marathon Infinity FREE!*

Ask for item # BND 1785

*Shipped in promotional packaging on CD-ROM.

WHILE SUPPLIES LAST!

17" Color Monitor

ONLY $449

15.8" viewable area

Maximum Resolution 1024 x 768 pixels

.28mm dot pitch

Ask for Item # MON 0489

PowerUser

EHOUSE®

of Macintosh™ and Mac OS computers!

150MHz/604 ONLY
$1499!
Shown: 150MHz PowerCenter Mini-Tower ONLY $1599!

Jam-packed with FREE SOFTWARE!

Netscape Navigator 3.0

SPECIAL LOW PRICE!
only $19.95* Item # BND 1856
*After $20 manufacturer's mail-in rebate. Special price before rebate is $39.95. Rebate offer expires 10/31/97.

DeskWriter 600

B&W: 600dpi! Color: 300 x 600dpi!*
$149.95
HEWLETT PACKARD
COLOR Ready!
*Color printing requires optional color kit. Only $39.95. Item # PA 0078
Ask for item # INP 0542

ADOBE PHOTOSHOP 4.0

Upgrade only $149.95
Adobe
Ask for item # UPG 0549
*Introductory price of $149.95 good while supplies last. Future price will be $179.95

Fastest Speed Available

NEW 56K

- ✔ Address Book
- ✔ Free ISP software
- ✔ Your choice of X2 or 56Kflex software

GLOBAL VILLAGE

TelePort 56Kbps Fax/Modem with X2 Technology
Ask for item # DMD 2619 ..... $209.95

TelePort 56Kbps Fax/Modem with K56flex Technology
Ask for item # DMD 2620 ..... $209.95

PowerComputing Lowest Prices Ever!

PowerComputing
PowerCenter Series
MAC OS LOW PROFILE OR MINI-TOWER:
• 604 PowerPC Processor • 16MB RAM
• 1 or 2GB HD • 8X CD-ROM • 512K Level-2 Cache

Monitor sold separately.

PowerCenter Series

PowerCenter 150 Low Profile (1.0GB HD)
Ask for Item # CPU 0506 ..... $1499

PowerCenter 150 Mini-Tower (1.0GB HD)
Ask for Item # CPU 508 ..... $1599

PowerCenter 166 Mini-Tower (2.0GB HD)
Ask for Item # CPU 0549 ..... $1899

PowerCenter 180 Mini-Tower (2.0GB HD)
Ask for Item # CPU 0550 ..... $2199

SIMMs

as low as $19.95
1MB 30-pin 80ns SIMMs
Ask for item # CHP 0022

Upgrade WAREHOUSE!

SAM 4.5 Upgrade
Ask for item # UPG 0585 ..... $39.95
Proof of ownership required.

NEW! Fractal Painter 5 Upgrade
Ask for item # UPG 0655 ..... $99.95

SoftWindows 95 4.0 Upgrade
Ask for item # UPG 0626 ..... $99.95*

Mac OS 7.6 Upgrade
Ask for item # UPG 0605 ..... $69.95

Microsoft Office 4.2.1 Upgrade
Ask for item # SID 0385 ..... $269.95

NEW! Symantec Norton Utilities 3.5 Upgrade
Ask for item # UTI 1126 ..... $49.95**
*Serial number required at time of purchase.
**After $50 manufacturer's mail-in rebate.

PRICES SLASHED!

iomega

Jaz Drive

Store up to 1GB on one 3.5" cartridge!
WAS $399
$299.95 Internal DR4840 Includes your first 1.0GB cartridge.*
External Drive shown NOW $399.95
Ask for item # DRI 1119
*Jaz Tools Utility Software included on first cartridge.
Increases Jaz & Zip performance speeds by up to 40%†
Purchase any Jaz Drive and get Speed Doubler 2 for only $29.95**
Ask for item # AAP 0388
**Drive must appear on same invoice. Shipped in promotional packaging.

1GB Jaz Cartridges

Ask for item # MED 0177

10+carts.	5-9 carts.	1-4 carts.
$89.95 ea.	$99.95 ea.	$124.95 ea.

†Based on Connectix benchmark tests

PowerTower Pro

Monitor sold separately.

PowerTower Pro 180MHz
Ask for Item # CPU 0376 ..... $2599

PowerTower Pro 200MHz
Ask for Item # CPU 0564 ..... $3199

PowerTower Pro 225MHz
Ask for Item # CPU 0563 ..... $3699

FREE!* WITH ANY PURCHASE

Marathon 2: Durandal!
Ask for item# AAA 0442. *You pay only $2.95 shipping and handling. While supplies last. Shipped in promotional packaging on CD-ROM.
WHILE SUPPLIES LAST!

Get a Power User's Tool Kit®

FREE! with every order!
Demo loads of powerful programs for FREE—some authors ask that you pay a small fee ($8-$25). The Power User's Tool Kit is FREE when you order from MacWAREHOUSE. You pay only $2.95 shipping and handling. If you would like the disk, please ask for Item # AAA 0462. All programs work with System 7.

MacWAREHOUSE
MAC OS SYSTEMS $995!
FREE CATALOG!

To order, call toll-free 24 hours a day, 7 days a week
1-800-434-3035

FREE CATALOG SUBSCRIPTION! Check the appropriate box(es) to receive your FREE 1-year catalog subscription(s) and mail this coupon to: 1720 Oak Street, P.O. Box 3013, Lakewood, NJ 08701

Name _____
Address _____ Apt. _____
City _____ State _____ Zip _____
(Expect to receive your first issue(s) within 4-6 weeks.)

MMW7

❑ *Yes, send me my FREE Power User's Tool Kit. Enclosed is my check for $2.95 to cover shipping & handling.*
❑ MacWAREHOUSE ❑ MicroWAREHOUSE ❑ DataComm WAREHOUSE ❑ MicroSystems WAREHOUSE

For your FREE Canadian Catalog, call toll-free 1-800-603-5139!

Circle 150 on reader service card

The Mac Zone — Established 1986

Your Macintosh® Catalog SuperStore™

PROUDLY SERVING MAC USERS SINCE 1986

We Carry the Full Line of Apple® Macintosh Computers

Authorized Catalog Reseller

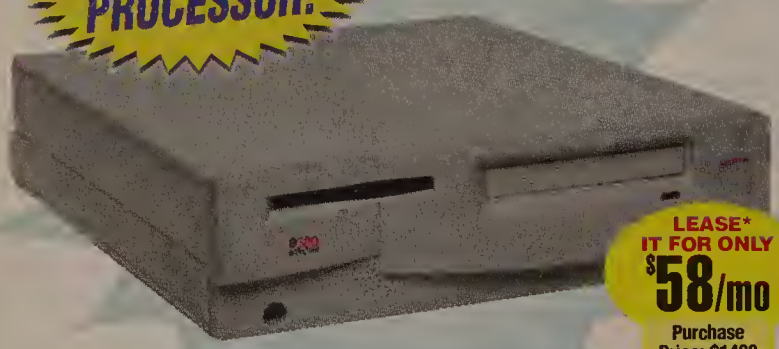
Over 6000 Products to Choose From! • Cool Bundles and Hot Specials! • Low Prices Everyday! • Overnight Delivery Available

we're open 24 hours a day 7 days a week

Complete Solutions

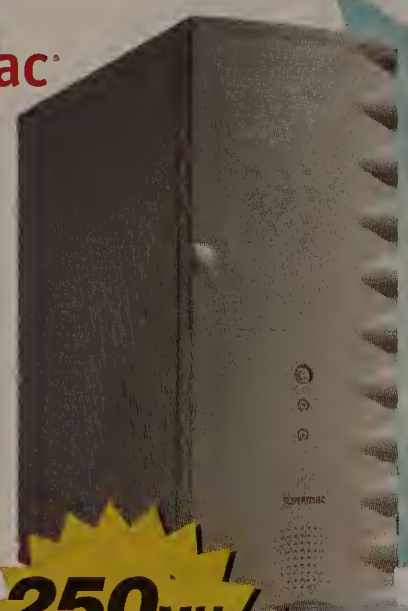
FOR GRAPHICS PROFESSIONALS

UPGRADABLE PROCESSOR!



LEASE* IT FOR ONLY $58/mo
Purchase Price: $1499
Order #78180

SUPERmac



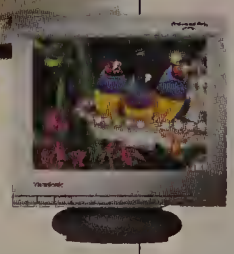
250MHz PowerPC™ 604e Processor

Strong, screaming-fast performance ideal for multimedia authors, engineers, video editors & more!

LEASE* IT FOR ONLY $248/mo
Purchase Price: $6199
Order #78181

SuperMac S900/250 with Viewsonic p810 21"

- Upgradable PowerPC™ 604e processor running at 250MHz
- 32MB 128-bit interleaved RAM, upgradable to 1GB
- 8X speed CD-ROM drive
- 6 PCI slots, 4 expansion bays
- Internal Zip drive



Viewsonic 21" Display (20" viewable)

- 0.25mm aperture grille for excellent clarity
- 1280x1024 maximum resolution at 80Hz refresh for richer, brighter images
- ARAG® anti-static coating•

SuperMac innovation for a super-low Mac Zone price!

SuperMac C500L/180 Desktop with Optiquest Q15"

- Upgradable 180MHz PowerPC™ 603e processor
- 16MB RAM, exp. to 144MB
- 1.2GB hard drive
- 8X CD-ROM drive
- CD-quality Surround Sound
- Software bundle featuring ClarisWorks, Quicken SE, Netscape Navigator and Adobe PageMill

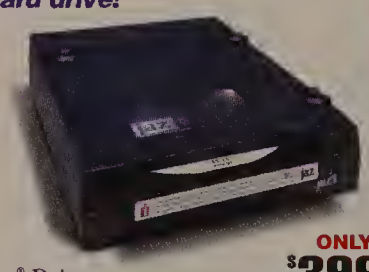
Optiquest Q53 15" Monitor (13" viewable) Not shown

- 0.28mm dot pitch
- 1280x1024 maximum resolution
- Flicker-free 86Hz refresh rate at 1024x768
- MPR-II and FCC-B certified safety standards

MEMORY UPGRADE

CALL NOW! As Low As $9.95 PER MB

The unlimited personal hard drive!



Jaz® Drive
1GB cartridge included! with tools & utilities
ONLY $399.95
#25659

iomega

The most affordable and portable storage solution

ONLY $149.85
#91825

Zip™ Drive
100MB cartridge included! with tools & utilities

The latest drawing NEWs from Adobe!

ONLY $89.88
#88205

Adobe Illustrator 7.0 Upgrade

Illustrator 7.0 provides unmatched flexibility, productivity and control, whether you're drawing for print, multimedia or the Web

Built-in speakers and sharp picture

ViewSonic 17GA PerfectSound™ 17" Multimedia Monitor (16" viewable)

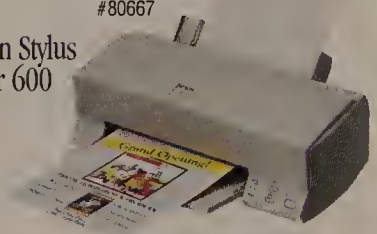
Built-in high fidelity speakers, headphone jack and external microphone port

ONLY $649.88
#88429

Breakthrough speed at breakthrough prices!

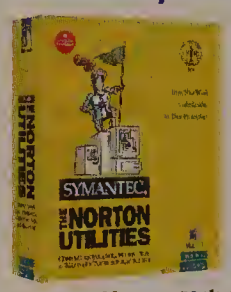
ONLY $299.88
#80667

Epson Stylus Color 600



Brilliant photo quality 1440 dpi!

Faster, more comprehensive crash prevention, data protection and data recovery!



ONLY $98.88
#04890

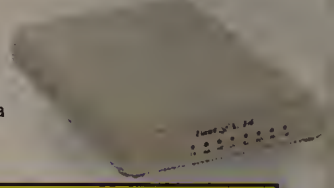
Norton Utilities 3.5 Upgrade

Best low cost Internet solution!

Boca FastMac 33.6 External Fax/Modem

ONLY $79.88*
#80679
*After $20 Mfr. Mail-in Rebate. Low Mac Zone Price $99.98

Blistering-fast 33.6 Kbps data transfer speed



THE MAC ZONE • TRUSTED INTERNATIONALLY

Australia • Austria • Belgium • Brazil • Central America • Chile • Colombia • Denmark • France • Germany • Holland • Hong Kong • Indonesia • India • Israel • Italy • Japan • Kenya • Mexico • New Zealand • Poland • Portugal • Singapore/Malaysia • Spain • Sweden • Switzerland • UAE/Middle East • United Kingdom • Venezuela

Corporate Sales	Government Sales	Education Sales	International Sales
1-800-258-0882	1-800-372-9663	1-800-381-9663	1-206-430-3570

Copyright © 1997 • The Mac Zone ® is a registered trademark of Multiple Zones International, Inc. All rights reserved

Circle 71 on your reader service card

SOURCE CODE MW707

Ordering from The Mac Zone is Easy!

VISIT us @ www.maczone.com
FAX your order to 206.430.3420
CALL US TOLL-FREE!
1-800-436-0606

Add applicable sales tax (only in OH, WA). Orders placed before 11 p.m. ET for items in stock will be shipped the same day (barring system failure, etc.). Shipping options include Ground, 2nd Day and Overnight delivery. Freight is based on average product weight. Handling extra. Insurance available. Credit cards are not charged until the order is shipped. Not responsible for typographical errors. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand.

*Dana Commercial Credit Corp. Business Lease: 36-month, full-payout lease with a $1 purchase option based on approved credit. Other leasing options available. Call for full details.

J&R COMPUTER WORLD

One of America's Largest Authorized Apple Dealers

Digital Cameras

Olympus
D-200L Digital Camera
•640 x 480 res in 24-bit color •Wide-angle lens with macro •Built-in auto flash •Auto focus
$579.99 (OLM D200L)

Kodak DC25 (KOD DC25) $499.99
Kodak DC50 (KOD DC50) $699.99
Sony DSC-F1 Digital Still Camera (SON DSC-F1) $849.99

Motorola StarMax 4000/160 Computer

•PowerPC™ 604e microprocessor with speeds up to 160MHz •32MB RAM •512K Level 2 cache •2.5GB hard drive •Internal 8X-speed CD-ROM drive •2MB VRAM •Fax/modem •Macintosh System 7.6 •Requires monitor
$1899.99 (MOT AMT4160-6S)

Special Offer!
PANASONIC S17 17" Monitor (PAN S17) is only $399.99 with purchase of Motorola StarMax Computer.

MOTOROLA
StarMax 4000/200 •EtherNet interface •200MHz processor $2699.99 (MOT AMT4200-6)

Bonus FREE Mac adapter (PAN UNIMAC82D).

Iomega Storage

Iomega Zip™ Drive
100MB Hard Drive/Backup
•Unlimited storage on inexpensive 100MB disks •Easy play & plug setup to SCSI connector •29ms access time •Includes one cartridge
$149.99 (BER ZIP100SCSI)

Spare 100MB Zip Cartridge (BER MAC100MBDSK) $19.99
Zip 100MB Cartridge 3-Pack (BER MAC100MBTRI) $49.99
Zip 100MB Cartridge 10-Pack (BER MAC100MBTEN) $149.99

HP Printers

EPSON
Stylus COLOR 800
•Prints in color up to 1440 x 720 dpi •Up to 8-pages per minute in black, 7-ppm in color •100-sheet/10 envelope input •Laser-quality black text, photo-quality color print
$449.99 (EPS STYLUS-800)

EPSON Stylus COLOR 600 (1440 x 720 dpi super high-res) (EPS STYLUS-600) $299.99
Hewlett-Packard LaserJet 6mp (HP C3982A) $949.99

External Modems

Global Village
TelePort Fax/Data/Voice Modem
•33.6/14.4 Kbps data/fax •Full duplex speakerphone with mic •Simultaneous voice and data
$149.99 (GLV TELEPORT336)

ZOOM V34X Plus (33.6) (ZOP 2836) $109.99
SupraExpress 336E (33.6, speakerphone) (SRA XPR336EMAC) $139.99
US Robotics Sportster 56K (56 Kbps) (USR MACSPORT56) $219.99

PCMCIA Modems

Megahertz
33.6 EtherNet Fax/Modem with XJack
•10Base-T and RJ11 cables •Flash ROM •Cellular direct connect •Full-featured data/fax software
$269.99 (MHZ XJAEM3336)

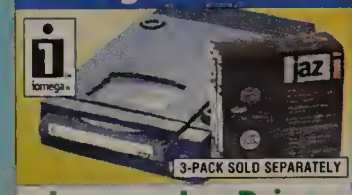
Motorola 33.6 Montana (MOT PC336MONTMAC) .. $249.99
Global Village PowerPort Platinum (28.8/14.4) (GLV PCMCIAPLTNM) $269.99

SyQuest syjet

SyQuest syjet 1.5GB
External Hard Drive with Removable Disk Cartridge
•1.5GB capacity per cartridge for virtually limitless, flexible storage
$499.99 (SYQ SYJET1SE-09)

SyQuest 1.5GB Cartridge (Formatted) (SYQ SYJET-005) $124.99
SyQuest 1.5GB 3-Pack (Formatted) (SYQ SYJET-006) $319.99
SyQuest 1.5GB 5-Pack (Formatted) (SYQ SYJET-007) $519.99

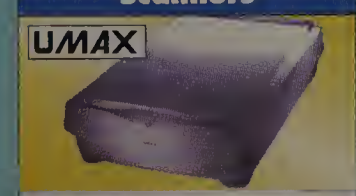
Iomega JAZ Drive



Iomega Jaz Drive
External Portable 1GB Drive
•So portable, it fits in your hand •Uses interchangeable Jaz disks for unlimited storage •6.73MB per second transfer rate •Includes SCSI cable for desktop and minitower; requires adapter for PowerBooks
$399.99 (BER JAZEXTSCSI)

Spare 1GB Cartridge for Jaz Drive (BER MAC1GIGCART) $124.99
1GB Cartridge 3-Pack for Jaz Drive (BER MAC1GIG3PAK) ... $299.99

Scanners



UMAX
Astra 600 for Mac
•One-pass, flatbed scanner •30-bit color scanning; 10-bit grayscale •300 x 600 dpi optical resolution
$249.99 (UMX ASTRA600MAC)

Microtek ScanMaker E6 (MTK SCANE6) $359.99
EPSON Expression 636 Artist (EPS 636-AMAC) $999.99
Agfa Arcus II (AGF ARCUSIIMAC) ... $1699.99

Keyboards

Adesso
Tru•Form Keyboard
•Split-style ergonomic keyboard for reduced stress on wrists and hands •Silent full-stroke keyswitches
$69.99 (AEO AEK-606)

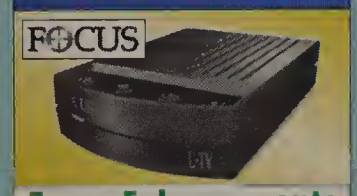
Adesso Soft-Touch Plus Extended Keyboard (AEO AEK-305) $44.99
PC Concepts MAC™ WAVE Keyboard (PON 61500) $59.99
Kinesis Essential Mac/PC Keyboard (KSS KB132MPC) $179.99

Carry Cases

Targus
Air Targus Notebook Case
•Puts a layer of pressurized air around notebook for protection
$99.99 (TAR CUN1A)

Targus CN01 Black Notepac case (TAR CN01) $39.99
Targus CP01 Notebook catalog case (TAR CP01) $149.99
Targus CS02 Shuttle travel case (TAR CS02) $199.99

Video Add-Ons



Focus Enhancements
L•TV Micro Presenter
•Small compact device converts Mac video into a standard TV signal (excludes Mac IIci and IIsi)
$149.99 (FOC LTVMICROMAC)

ATI 4MB PCI Video Graphics Card (ATI 4MBXCLAIMVR) $299.99
Truevision Bravado 1000 (TRU BRAVADOMAC) $579.99
miroMOTIONDC20 Pro Video Editor (MRO MOTIONDC20) $699.99

Monitors

Panasonic PanaSync™ S17
17" Color Monitor
•16" viewable image •0.27mm dot pitch •Flat square •On-screen menu •Requires Mac adapter
$599.99 (PAN S17)

Panasonic PanaSync E15 (PAN E15)...requires adapter... $299.99
Panasonic PanaSync S15 (PAN S15)..requires adapter... $349.99
Panasonic PanaMedia™ 17 (PAN PM17)..requires adapter. $619.99

Edutainment Software

Interplay
Mario Teaches Typing 2
$29.99

3D Dinosour Adv.- Anniversary Ed. by Know. Adv. $24.99
Body Voyoge 3D by WEA Visuols . $24.99
Bridge Deluxe w/ Omar Shorif by Interploy $9.99
Build A Book with Roberto by Theatrix $16.99
CyberSound Studio by CyberSound . $99.99
InventorLabs Houghton Mifflin $29.99

Walt Disney
Ready To Read with Pooh
$34.99

Net Explorations w/ Web W. by RondomSoft.. $29.99
Sch. Rock- Explorotion Stotion by Elec. Arts $29.99
Science Blaster Jr. by Dovidson $29.99
Scrabble by Hasbro $39.99
Sim Classics Collection 3 by Maxis $29.99
Willie by Grophix Zone $24.99

Business Software

Claris
Emailer (2.0)
$44.99

Conflict Catcher (4.0) Casody & Greene. $59.99
Koi's Power Goo by MetoTools $39.99
Moc OS (7.6) by Apple..... $89.99
Norton Utilities (3.2) by Symontec $89.99
Now Up•To•Date & Contact (3.6.5) $69.99, after $20 rebate
Organizer (2.0) by Claris $69.99

Symantec
Cafe (1.5)
$74.99

QuorkXPress (3.32) by Quork..... $649.99
RAM Doubler (2.0) by Connectix $59.99
SAM- Symantec AntiVirus (4.5) by Symontec $69.99
SoftWindows 95 (4.0) w/ Win95 by Insignia $339.99
Style Script (3.5) by GDT $89.99
Visual Page by Symantec $89.99

Order Your Free Catalogue Now!

J&R COMPUTER WORLD

Apple PowerBook 1400C/117 • 117MHz • 16MB RAM • 1-Gigobyte Hord Drive • 11.3" TFT Color LCD • 6x-Speed CD-ROM Drive •NiMH Battery
$3499.99

Apple Performa Desktop 6360/160 • 160MHz • 16MB RAM • 1.2GB Hord Drive • 8x-speed CD-ROM Drive •High-speed Internet Access • Requires Monitor
$1399.99

To Order Toll Free and Receive a Free Catalogue

24 Hours, 7 Days, Anywhere In The USA
800-221-8180
PARK ROW • NEW YORK • NY • 10038 FAX: 1-800-232-4432

MAIL ORDER: J&R Computer World, Dept. MW0797, 59-50 Queens Midtown Expressway Maspeth, New York 11378

Not responsible for typographical or pictorial errors. Some quantities may be limited. All merchandise brand-new, factory-fresh and 100% guaranteed!

Circle 282 on reader service card

240MHZ MAC CLONE $1199

POWERtools MacOS Clones

Base Systems 0 / 0 / floppy :

* Prices valid with purchase of any bundle

Start here

3180	603e/180	$ 799*
3200	603e/200	$ 999*
3240	603e/240	$1199*
4200	604e/200	$1399*

All Infiniti series computers can be upgraded to faster processors and even CHRP!

And Add One of These **6 NEW** Bundles

Manufactured with the highest quality components available.

Powered by Motorola PowerPC

MacUser May 1997 CPU Scores

Infiniti 4200 Pro	419
SuperMac S900/225	410
Power Macintosh 9600/200	409
Infiniti 3240 Power	374
StarMax 4000/200MT	367
M*Power 604e200	365
PowerBase 240	309
SuperMac C600/240	299

POWERtools carries the complete line of Quality Apple products, as well as a range of third party products.

SMART BUNDLE — Call for Price!

1. 16MB RAM
2.1GB Hard Drive
8X CD Rom
2MB VRAM
256k L2 Cache
ADB KB & Mouse

PRO BUNDLE — Call for Price!

2. 32MB RAM
3.2GB Hard Drive
8X CD Rom
2MB VRAM
512k L2 Cache
ADB KB & Mouse

ELITE BUNDLE — Call for Price!

3. 32MB RAM
3.2GB Hard Drive
8X CD Rom
4MB 3D Video Card
2MB VRAM
512k L2 Cache
ADB KB & Mouse
10-Base-T Ethernet
33.6 Fax / Modem

SERVER BUNDLE — Call for Price!

4. 32MB RAM
3.2GB Hard Drive
8X CD Rom
2MB VRAM
512k L2 Cache
ADB KB & Mouse
100-Base-T Ethernet
AppleShare

dVp-1 (digital video) — Call for Price!

5. 32MB RAM
3.2GB SUPER-FAST DRIVE
8X CD ROM
4MB VIDEO SGRAM
512K L2 CACHE
ADB KB & MOUSE
MIRO MOTION DC-20 CARD

dVp-2 (digital video) — Call for Price!

6. 32MB RAM
3.2GB SUPER-FAST DRIVE
(2) 4.2GB FAST/WIDE SCSI DRIVES
FAST SCSI PCI CARD
8X CD ROM
4MB VIDEO SGRAM
512K L2 CACHE
ADB KB & MOUSE
MIRO MOTION DC-20 CARD

All systems include MacOS, 1.44 floppy drive & Tower Case

MONITORS

SONY	MULTISCAN 100SX	15"	1024x768	$367.00
SONY	MULTISCAN 200SX	17"	1024x768	$693.00
SONY	MULTISCAN 300SF	20"	1280x1024	$1,615.00
RADIUS	PRESSVIEW 17SR	17"	1600x1200	$1,789.00
RADIUS	PRESSVIEW 21SR	21"	1600x1200	$2,989.00
RADIUS	PRECISIONVIEW 21	21"	1600x1200	$1,789.00
NEC	M700	17"	1024x768	$753.00
NEC	XE21	21"	1152x870	$1,569.00
VIEWSONIC	15 GA-2	15"	1024x768	$399.00
VIEWSONIC	071	17"	1152x070	$539.95
VIEWSONIC	PT 815	21"	1600x1200	$1,689.00

VIDEO CARDS

ATI	XCLAIM VR	2MB	(PCI)	$220.00
ATI	XCLAIM VR	4MB	(PCI)	$292.00
ATI	XCLAIM 3D	4MB	(PCI)	$185.00
ATI	XCLAIM 3D	8MB	(PCI)	$255.00
IMS	TWIN TURBO 128M		(PCI)	$299.00
MATROX	MILLENIUM 2D & 3D	4MB	(PCI)	$275.00
MIRO	MIROMOTION DC-20 VIDEO IN OUT		(PCI)	$549.00
MIRO	MIROMOTION DC-30 VIDEO IN OUT		(PCI)	$879.00

DIGITIZING TABLETS

WACOM	ARTZ	6x8	$287.00
WACOM	ARTZ	12X12	$417.00

MODEMS

US ROBOTICS SPORTSTER VOICE FOR MAC	33.6KBPS	$155.00
US ROBOTICS SPORTSTER X2 E	56.6KBPS	$198.95
GLOBAL VILLAGE TELEPORT SPEAKER PHONE	33.6KBPS	$145.00
GLOBAL VILLAGE POWER PORT PLAT. PRO PC CARD		$329.95

SCANNERS

AGFA	SNAPSCAN	600DPI	24BIT	$299.00
AGFA	STUDIOSTAR W PSHOP LE	600DPI	24BIT	$749.00
AGFA	DUOSCAN DUAL-MODE	1000X2000DPI		$3,532.00

MEDIA

ZIP DISKS	SINGLES-$17.99, 3 PACK-$45.95, 10 PACK-$139.99	
JAZZ DISKS	SINGLES-$118.95, 5 PACK- $495.00	

PRINTERS

EPSON	STYLUS 600	1440 DPI	$297.00
EPSON	STYLUS 800	1440 DPI	$447.95
EPSON	STYLUS PRO XL	11" X 17"	$1,479.95
HP	6MP	600DPI	$995.96
APPLE	4/600	600DPI	$869.95

CPU UPGRADES

(APPLE, POWERCOMPUTING, UMAX)

POWERTOOLS	POWERSOURCE 604	150 MHZ	$299.00
POWERTOOLS	POWERSOURCE 204E	200MHZ	$799.00
POWERTOOLS	POWERSOURCE 604	250MHZ	$1,399.00
POWERTOOLS	INFINITI MOTHERBOARD UPGRADES		CALL

tel: 800-891-4307 mon-fri 9-7cst
512-891-0646 Email: sales@pwrtools.com
fax: 512-476-6399 url: www.pwrtools.com

Call For Latest Prices-Leasing Available-Dealer and Educational Discounts

Circle 62 on reader service card

TELECOMMUTING & Home Office

EXPOSITION & CONFERENCE

October 15–17, 1997
Moscone Convention Center
San Francisco, CA

Corporate Solutions Through Remote Access

Virtual Offices... Remote Business Locations... Work-at-Home Employees... they're all part of a movement that's reshaping the American workplace. By the year 2000, this shift of the workforce will be 55 million workers strong.

Productivity-enhancing technology

Telecommuting & Home Office Exposition & Conference offers you the solutions, strategies and products to make this monumental shift possible. You'll see:

- remote access technology
- networking & telecommunications equipment
- internet access providers
- computer hardware & software
- products & services for remote offices
- financial, legal, insurance & management consulting services

An educational, business-to-business environment

If you're an executive or network manager or facilities manager charged with telecommuting your department, or a current telecommuter or home office worker, Telecommuting & Home Office Exposition & Conference is a must-attend event for you! The conference provides pragmatic tips on costs vs. benefits of telecommuting, technology trends, human resource issues, and more. Corporate case studies and insights from successful home-based workers round out the program.

TELECOMMUTING & HOME OFFICE
EXPOSITION & CONFERENCE

Sponsored by:

FLAGSHIP SPONSOR NetworkWorld
PC WORLD
Macworld
IDC/LINK
Forbes
ASAP
Forbes

Steelcase, Inc.
The Mobile Office Association
Mobile Office Vehicles
Working SOLO

For more information, call 800-393-THOE

See THOE on the WWW: http://www.mha.com/thoe/

Send more information on Telecommuting & Home Office Exposition & Conference!

MCW

I am interested in: ❑ **Attending** ❑ **Exhibiting**

Name _____

Company _____

Address _____

City/State/Zip _____

Phone _____ Fax _____

email _____

Mail to: MHA Event Management, 1400 Providence Highway, P.O. Box 9127, Norwood, MA 02062. Or Fax to: 617-440-0357

THIS IS NOT A REGISTRATION FORM.

PRODUCT INDEX

Category	Page No.
Business Operations	**178-179**
Bar Code	
CD Production	
Inventory Management	
Print Utility	
Video/Display	
Communications/ Networking	**183**
Cross Platform	
Education/ Entertainment	**180-182**
Discount Software	
Games	
Music	
Graphics	**182**
Clip Art	
Digital Art	
Translation	
Memory & Upgrades	**201-207**
Memory Upgrade	
Peripheral Products	**183-185**
Cables	
Cd Labeling	
Digital Media	
Input Devices	
Magnetic Media	
Mobile Computing	
Software Publishing	
Services	**207-208**
Color Printing	
Data Recovery	
Digital Production	
Mouse Pads	
Repair	
Systems & Peripherals	**185-200**

Account Managers . .800.888.8622

Carol Johnstone . .415.978.3152
carol_johnstone@macworld.com

Shannon Smith . . .415.974.7414
shannon_smith@macworld.com

Niki Stranz 415.978.3105
niki_stranz@macworld.com

Ad Trafficking Coordinator:

Brian Mullin 415.267.1735
brian_mullin@macworld.com

DTP Coordinator:

Clayton Haberman 415.978.3132
clayton_haberman@macworld.com

MAC & NEWTON BAR CODE SPECIALISTS
800-988-1914
• Mobile Wand & MobileScan for Newton
• Easy Plug and Play Cross Platform - Mac & PC's
• Wireless and Portable Solutions
• CCD / Laser / Wand Readers
• Fonts & Software / Bar Code Labels & Printer
• Sun & Dec Bar Code Solutions
• Corporate and School P.O.'s Welcome
Int'l: 415-325-0379 Fax:415-325-1779
InPath DEVICES

BAR CODE PRO™
Create EPS graphics for your desktop publishing documents. Call for a free demo disk and get the information you need to make an intelligent purchasing decision for Mac or Windows.
800.619.0399
718.499.6293
or fax
718.768.3997
http://www.snx.com
0 012345 7
SYNEX
CIRCLE 450 ON READER SERVICE CARD

Newton® Joins the Mac-Barcode® Family!
One Stop Shopping with Friendly Support from the Experts
Mobile
Simple
Fast
Accurate
Newton® Walk-About™
Mac-Barcode ProLabel Software
SmartLaser/SmartScanner/SmartPen
Thermal Transfer Printer
Call for Literature & Free Demo Disk
The Mac-Barcode Co.
800-733-7592
http://www.mac-barcode.com
CIRCLE 562 ON READER SERVICE CARD

Bar Coding
Call us for Info
• Portable & Non-Portable Readers
• Radio Frequency Readers
• PostScript Bar Code Fonts
800-345-4220
WORTHINGTON DATA SOLUTIONS

• BAR CODE/LABELING SOFTWARE • CREATE BAR CODE GRAPHICS • BAR CODE FONTS •
• UPC-A/UPC-E • UCC/EAN-128 COUPON CODES • Int 2o/5 • CODE 39 • CODE 128 • PDSTNET •
• PORTABLE BAR CODE READERS • EXPERT CONSULTATION • QUALITY SERVICE • LIFETIME SUPPORT •
300,000 Business People Worldwide Use Our Bar Coding Products!
Bear Rock TECHNOLOGIES
Call to find out how.
Order to find out why.
800 232·7625
www.bearrock.com
(916) 672-0244
3 New Products Now Available
• PrintBar III
• PrintBar Wizard
• CodeScan Lite
Call for more information and your FREE catalog!

The makers of the most powerful printing software in the world...
LaserMerge® Electronic Paper®
January Mac Home ★★★½ August MacWorld ★★★ November MacUser ★★★½
now bring you the most powerful and the most easy-to-use printing software in the world...
New! available in April 97
printChef™
Spices up any application's printing...
you can just feel the power...
Print
Cancel
Options
Help
printChef
This is the button you push
...and printChef does all this for any application & on any printer...
• Create new paper sizes & layouts
• Control toner & ink-jet level
• Watermarks (at page & object level)
• Preview printing with zoom
• Booklets with built-in "page creep"
• Accumulate print jobs into one fax, booklet, or printing
• Flash print to PostScript 10x faster
• Dump a database through a form
• Fill out forms with "Fill in the Blank"™
• "Variable data" printing (fast & easy)
• Create your own multi-ups
• Make full or partial label layouts
• Two cover pages
• Front-to-back, range, & collated prints
• PS Level 2 forms caching
• Stamp different images for each customer, all from one print recipe
• Print logging with security & reports
• Create any bar code from one font
• Serialization
• Sign letters & faxes electronically
• Imports EPS & PICT images
• Control print resolution
• 38 Print-time text commands & 100 database commands
• You can move, rotate, colorize, clip, scale, & duplicate each object & page to your design...
and use this power to make your own letterheads, business cards, invoices, name plates, labels, badges, envelopes, and much, much more...
Use our automatic booklet maker (with scaled pages) or design your own booklets and watch as your application adjusts to the new mini-paper size!
Unbelievable toner control at the job, print recipe, page, or object level!
Paper thickness control to create proper booklets
Head-to-toe & reversed printing
Create your own catalogs of print recipes
Snapshots & help make it simple to see what each print recipe will create
Automatic miniatures- simply choose a layout
Paper control that you wouldn't believe possible
Comes fully loaded with our paper designer, print recipe designer, "Fill-In-the-Blank" & this spectacular printing interface!
For 101 ways to boost the printing power of any application & printer, call (800) 648-6840 or try our demo at www.mindgate.com
Introductory priced at $45
...so that everyone can make their printer sizzle right now!
90-day money-back guarantee
Installs in English, German, Portuguese and Spanish
printChef is a print extension that sits between any application & any printer driver... It uses Print Recipes that you design to control any application's output...
System 7+ required! For 680x0 & any PowerMac. Works with ANY printer & ANY application, printChef's miracles require only 32K of memory QuickDraw GX is NOT required!
MindGate, LaserMerge, Electronic Paper & their logos are registered trademarks, printChef, its logo, & Fill-in-the-Blank are trademarks, & "This is the Button You Push" is a servicemark of MindGate Technologies.
List Price Base unit $95 Net. $15-$25/unit
Worldwide (615) 937-6800
Fax Orders. (615) 937-6801
Order Direct
VISA
MindGate® Technologies, Inc.
164 Oliver Smith Road
Flintville, TN 37335-5335
or thru MicroWAREHOUSE
800-255-6227
CIRCLE 517 ON READER SERVICE CARD

IF WE DON'T SELL IT, IT'S NOT WORTH LOOKING AT.

PANELIGHT IS YOUR ONE STOP SHOP FOR ALL LEADING BRANDS • SALES, RENTALS, & LEASES • MONEY BACK GUARANTEE.

PANELIGHT OFFERS THE BEST IN SELF-CONTAINED LCD PROJECTORS, PANELS AND ACCESSORIES FOR PC'S, MAC'S AND HIGH-RES WORKSTATIONS FROM THE WORLD'S LEADING MANUFACTURERS: PANASONIC, EPSON, IN FOCUS, TOSHIBA, PROXIMA, NEC, NVIEW, POLAROID AND OTHERS.

Panelight DISPLAY SYSTEMS, INC.

CALL THE EXPERTS AT PANELIGHT DISPLAY SYSTEMS, INC.

IT'S OUR BUSINESS TO ENSURE THAT YOUR BIG IDEAS GET THE ATTENTION THEY DESERVE – NO MATTER WHAT THE VENUE. WE INTIMATELY KNOW AND SELL THE LEADING BRANDS. WE CAN RECOMMEND WHAT FITS YOUR SPECIFIC NEEDS.

CALL NOW FOR OUR FREE, HIGHLY INFORMATIVE CATALOG OF PC VGA/SVGA, MAC, VIDEO, AND WORKSTATION SOLUTIONS. MOST PRODUCTS CAN BE DELIVERED OVERNIGHT, AND COME WITH A MONEY-BACK GUARANTEE. SO, WHY LOOK ANYWHERE ELSE?

CALL PANELIGHT TODAY!

CALL PANELIGHT FOR OUR FREE CATALOG: 1-800-726-3599.

MON.-FRI., 6:30AM-5:30PM P.S.T.
24-HR. FAX: 415-986-3817
OR E-MAIL: SALES@PANELIGHT.COM

HTTP://WWW.PANELIGHT.COM

PANELIGHT DISPLAY SYSTEMS, INC.,
P.O. BOX 190940, SAN FRANCISCO, CA 94119.
OR CALL 415-772-5800.

CIRCLE 481 ON READER SERVICE CARD

POINT OF SALE
INVENTORY CONTROL
• Retail
• Rentals
• Service
• Manufacturing
• Multi Location

Bar Code/Magnetic Stripe Readers
Receipt Printers • Cash Drawers
Credit Card Auth.& Deposit Software
Download Demos and Interactive Catalog
at our Web Site: http://www.posdirect.com
call, fax, or e-mail for a FREE CATALOG
(800) 622-7670 sales@posdirect.com
(618) 985-8237 TEL • (618) 985-3014 FAX
Dealer Inquiries Welcome
30 day MBG
VISA MasterCard
P.O.S. DIRECT

CIRCLE 466 ON READER SERVICE CARD

Point of Sale
Inventory Management

POS•IM...
the Point of Sale leader!
• Easy to Use
• Intuitive
• Powerful

Credit Card and Leasing Options Available!

FREE Catalog!
(800) 409-7678
Ensign SYSTEMS INC

DESIGN, PRINT and APPLY CD Labels for $79.95

That's NEATO!

Kit Includes:
• NEATO CD Label Applicator
• Set of Assorted Labels & Inserts
• CD-FACE™ including Design Software (Mac/PC) and Background Art for Labels & Inserts
• Disc & Jewel Case Templates for Popular Graphics Programs (Mac/PC)

NEATO
JEWEL CASE INSERTS TOO!
VISA / MC / AMEX

NEATO™
CD LABELER KIT

1 Create your own artwork *On Your Computer* with NEATO Templates.
2 Print on *Any Laser or InkJet* using NEATO pressure-sensitive labels.
3 Using the NEATO Labeler, apply labels...*PERFECTLY EVERY TIME!*

IMAGING MAGAZINE PRODUCT OF THE YEAR 96

NEATO LLC
U.S.: 250 Dodge Ave., East Haven, CT 06512
800-984-9800 203-466-5170 Fax 203-466-5178
Europe: Ealing House, 33 Hanger Lane, London W5 3HJ, UK +44 (0)990 561571
Fax +44 (0)181 932 0480
See us at: http://www.neato.com

CIRCLE 475 ON READER SERVICE CARD

Software Blowout!!!
Tel:1-800-714-4381

Microsoft

MS Office 4.21 (Word, Excel, Powerpoint)	$275
MS Word 5.0/6.01	$75/150.
MS Excel 5.0	$150
MS Powerpoint 4	$150
MS Project 4.0	$250
MS Office Win 97	$295

Metatools

Kai's PoweTools 3	$99
Bryce 2	$135
Final Effects 3.0	$375
Studio Effects	$375
Convolver 1.0	$90

Adobe

Photoshop 4.0	$335
Pagemaker 6.5	$299
Illustrator 6.0	$245
Premier 4.2	$335
After Effects 3	$350
Framemaker 5	$350
Acrobat 3.0	$90
Streamline 4/Persuasion 4.0	$99/199
After Effects Studio Bundle	call
Pagemill	$79

Macromedia

Director 5 (w/ Shockwave)	call
Macromedia Studio	call
Freehand 7.0 / VectorEffects)	$235
Fontographer 4.1	$200
XRes 2	$150
Extreme 3D	$250
Freehand Graphic Studio	$299
SoundEdit 16 Deck II	$275

Claris Filemaker Pro 3.0	$150
Fractal Design Painter 4.0	$235
Ray Dream Studio 4.1	$220
Fractal Design Detailer	$199
Expression 1.0	$199
Live Picture	$390
Specular Infini-D 3.5	$240
Adobe Sitemill	$185
Canvas 5	$255
Extensis PageTools 2.0	$85
Extensis Fetch 1.5	$85
Corel Draw	$175
Corel WordPerfect	call
Truevision Targa 1000/Pro	$1850/$1999
Truevision Targa 2000/Pro	$2900/$3200
Insignia Softwindows 3 /W3.11	$245
Insignia Softwindows 3/win95	$280
Virtus Alien Skin 1.0	$49
Intuit Quicken	call
Now up to date 1.5	$55
Strata	call

Software Mart

Tel: 1- (800) 714-4381
1- (818) 346-6350
Fax: 1- (818) 346-1890
Bus. Hours: M-F 9:00-6:00 PM PST
Visa, MC, Discover, Am Ex
Prices valid while supplies last.
Prices are subject to change without notice.
Call for items not listed.

CIRCLE 448 ON READER SERVICE CARD

Student - Teacher & School Discounts

We will beat any advertised Price * Latest Version & Full Packages

$469

Artist's Dream Bundle
Wacom II 6x8 & Painter 4.0

$129

FileMaker Pro 3.0
#1 Relational Database

$1349

ElectricImage 2.7.5 Broadcast
Hi-Speed Rendering

$79

Eye Candy 3.0
Photoshop Plug-in that contains several filters

$199

FreeHand Graphics Studio 7
Includes FreeHand 7, Fontographer, Extreme 3d, and Xres

$319

MiniCad 6.0
2D/3D Cad Software

$199

Fractal 3D Suite
Includes Studio, Poser & Detailer

$269

SoftWindows 95 4.0
Run Windows 95 on your Macintosh

CALL

LightWave 3D 5.0
Modeling & Animation

3D Web Warkshap	$95
Acuris Clip Madel Library	$129
Agfa StudiaScan IIsi LE	$479
Alias Sketch! 2.0.2	$199
Autharware 3.5.1	$649
AutaCAD R12 w/Ame	$199
BBEdit 4.0.2	$79
Berserk 1.0	$149
Bitstream Callectian	$129
Baris Effects Pra 2.1	$199
Bravado 1000 w/Premiere	$649
Canvas 5.0	$179
ClarisWarks 4.0 Internet Editian	$89
Cada Finale 3.7	$249
CadeWarriar 11 Pro	$129
Canflict Catcher 4.0	$59
CarelDRAW Suite 6	$169
Cricket Graph III 3.5.3	$79
Cubase Audia XT/VST	$399
DeBabelizer Taolbax 1.6.5	$219
DeltaGraph 4.0	$89
Director 5.0.1	$299
Encare 4.1.1	$249
EndNate Plus 2.1 w/EndLink	$165
Epsan Expressian 636-Artist	$1349
Epsan Stylus 800 InkJet	$419
Final Draft 4.1	$125
Form Z 2.9	CALL
Fractal Expressian 1.0	$199
Fractal Paser 2.0	$95
Hard Disk ToalKit 2.01	$109
HyperStudio 3.0	$119
Infini-D 3.5	$229
Inspiratian 4.1c	$89
Japanese Language Kit 1.2	$129
Judsan-Rasebush Wildside	$49
KPT Bryce 2.0	$119
KPT Final Effects 3.0	$349
Kai's Pawer Taols 3.0.2	$85
KaleidaGraph 3.0	$89
Kadak DC50 Digital Camera	$649
LightningDraw Gx 1.0.3	$99
Live Picture 2.5.1	$199
Lagic Audia	$399
M.Y.O.B 7.0	$49
MTrapalis 1.1.1	$495

Mac Academy Tutorial Videas	$35
Mathematica 3.0 Student	$149
Matlab 4.0 Student	$99
Mavls Beacan Teaches Typing 2.0	$35
Medley 3.0	$105
MeshPaint 3D 1.6	$315
Masaic 1.43	$249
Mavie Cleaner Pra 1.3	$99
MovieFla 2.0.2	$349
Myrmidan 1.1	$35
NetObjects Fuslan 1.0	$199
Netscape Navigatar Gold 3.0	$49
Nisus Writer 5.0	$99
Naw Utilities 6.7	$55
OmniPage Pra 7.0	$329
Opcade Overture 2.0.1	$249
Opcade Visian 3.5	CALL
Phata/Graphic Edges Val 1,2, OR 3	CALL
PhatoTools 1.0	$79
Phatatone Digital Art	$139
Pawer/Pac 1 Auta/Effect	CALL
Presenter 3D 3.6	$995
Printshop Dlx Ensemble	$85
Praductian Manager 1.0	$249
Retraspect 3.0	$109
SPSS 6.1 Student	$99
Sculpt 3D 4.1	$219
SoundEdit 16+ Deck II	$249
Speed Daubler 2.0	$55
Spring Cleaning 1.0	$49
Squizz 2.0	$69
Studia Effects 1.0	$349
StudioPra 2.0	$549
SuperCard 3.0	$129
System 7.6 Saftware	$85
Terra Farma Regianal	$119
The Teacher's Taal Kit	$69
Trackman Marble	$85
Typa/Graphic Edges 3.0	CALL
Umax Vista-S6E Scanner w/MDL	$279
Us Rabotics Spartster 56k	$209
Virex 5.7	$49
Wacam Art Z II 12x12	$399
WebPage Graphics	$69
WebPainter 1.0	$79
WardPerfect 3.5.1	$69

Visit our NEW Web Site!!
http://www.swsonline.com

Call for FREE Catalog!
(800) 831-2295
Includes Complete Price List & Free Product Info.

**SAME DAY SHIPPING ON MOST ITEMS.
**ADOBE, SYMANTEC & MICROSOFT PRODUCTS AVAILABLE TO QUALIFIED STUDENTS, TEACHERS & SCHOOLS.
**SCHOOL PURCHASE ORDERS WELCOME.
**NO SURCHARGE ON CREDIT CARDS.
**IBM & MAC PRODUCTS AVAILABLE.

The SOFTWARE Source

1-800-831-2295

1750 Brielle Ave, Unit A-2
Ocean, NJ 07712
PHONE (908) 695-2100
FAX (908) 695-9371
E-MAIL: SFTSWS@AOL.COM

CIRCLE 423 ON READER SERVICE CARD

Thousands of MACINTOSH Titles Available

www.UNITED CD ROM®.com

THRUSTMASTER T-2 NEW FOR THE MAC $129 55454

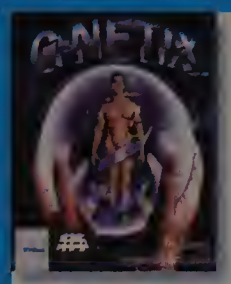
CALL US NOW FOR A FREE CATALOG!

1•800•864•8334

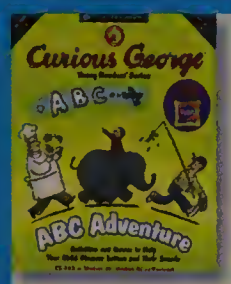
OVER 10,000 TITLES IN STOCK DAILY!

FREE SOFTWARE WITH EVERY PURCHASE!*

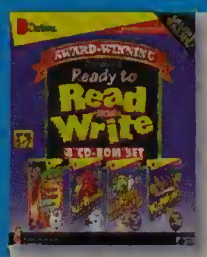
SAME DAY SHIPPING!**



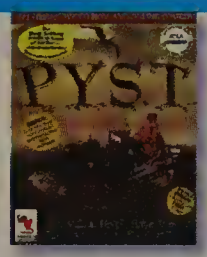
G-NETIX
by ISM Interactive
At your disposal is genetic material & the biotechnical power to bring it all to life. It's in your power to create miracles...or monstrosities.
58394 $17



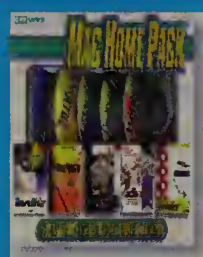
CURIOUS GEORGE ABC ADVENTURE
by Houghton Mifflin
Curious Gearge goes bananas over the ABC's! An exploration of alphabet sounds, shapes & pronunciations.
54742 $29



READY TO READ/WRITE PACK
Includes Reading Blaster Jr., Kid Works Deluxe, Kid Phonics and Chicka Chicka Boom Boom.
Davidson.
51859 $59



PYST
Inspired by the best-selling adventure game MYST. Features fully interactive scenes & postcards from the legions of visitors on the island.
55412 $13

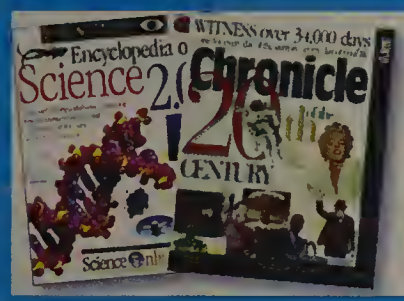


MAC HOME PAC
Includes Resume Maker, Calendars & More, CardShop Plus Deluxe, Willmaker 5.0 & Better Homes & Gardens® Healthy Cooking.
WIZARD Works
54359 $25

DAMAGE INCORPORATED
Take command of the world's top special forces unit in this extraordinary 3D first-person shooting extravaganza.
55624 $27

SPQR
As the apprentice of a gifted inventor, you are in the midst of a tangled web of deceit & intrigue as you attempt to uncover a plot to destroy Rome.
54533 $44

ZPC
You are in the midst of an evil futuristic dictatorship as a former assassin turned good who must solve the mystery of your former identity.
51978 $45



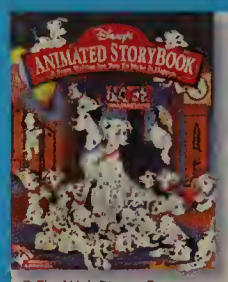
ENCYCLOPEDIA OF SCIENCE 2: Technical material in Physics, Chemistry, Mathematics & the Life Sciences with 80 animations, 4 hours of video & 2,000 text screens.
CHRONICLE OF THE 20TH CENTURY: The most comprehensive guide to the century ever created. Archival video footage, photos, & entries for every day of the 20th Century.

New!

EARTH QUEST: In this unique virtual museum, you will journey to the center of the planet & explore the secrets & treasures beneath the Earth's surface. You will see the effects of time passing & listen to the sounds of the planet.

Science 2.0 53595 $32
Chronicle 53583 $32
Earth Quest 58606 $27

DK Multimedia



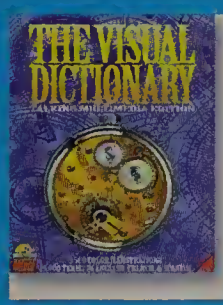
101 DALMATIANS ANIMATED STORYBOOK
Kids can sing along, play intriguing new learning games & explore hundreds of surprise animations
© The Walt Disney Company
52652 $35

PARTS OF SPEECH: Defines & explains the rules of usage for all the major parts of speech. Includes the following units: Introducing the Noun, Meeting the Pronoun, Getting to Know the Verb, Discovering the Adjective & Adverb.

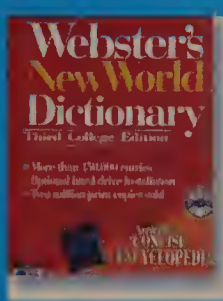
YOUR CHOICE! ROAD TO ANCIENT EGYPT, ROAD TO ANCIENT GREECE OR ROAD TO ANCIENT ROME: CDROM versions of the Thomas S. Klise Company's programs includes hundreds of new interactive elements that make the subject of ancient history come alive. Featuring the original narrative and visuals, each of the programs includes two matching exercises, a comprehensive glossary of important terms, an encyclopedia of related subject areas, key maps & historical timelines.

Arch Publishers

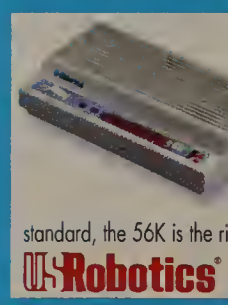
Parts of Speech 53786 $38
Egypt 53783 $33 Greece 53784 $33 Rome 53785 $33



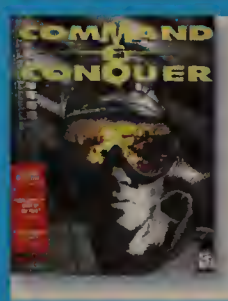
VISUAL DICTIONARY
by Cambrix
A comprehensive index with word & picture search capabilities, over 600 subjects, 3,500 images & 25,000 words.
56347 $29



WEBSTER'S NEW WORLD DICTIONARY
by Zane Publishing
3rd College Edition, with 150,000 entries, the desk dictionary used by leading newspaper.
42344 $16



SPORTSTER 56K MAC MODEM
Maximum speed for minimum effort! If you are ready for speeds almost double the current standard, the 56K is the right choice, right now!
U.S. Robotics® 57373 $220



COMMAND & CONQUER
by Electronic Arts
You must decide just where your loyalty rests in the battle for the world's most valuable resources.
53325 $43

SAT STUDYWARE
by Cliffs Notes
This proactive software package will guide you through testing subjects & methods quickly, efficiently & comprehensively.
54204 $16

* While supplies lost. Shipping charges apply to free offers.
**Orders received as late as 9:30 pm (CST) for 2nd day air. Call for other deadline times.
Special offers, item availability and prices may vary according to format and are subject to change without notice. All prices in U.S. dollars. Not responsible for inadvertent errors.

ALL MAJOR CREDIT CARDS ACCEPTED

CODE M07

Business Hours: Mon 8am–8pm; Tues-Fri 9am–8pm; Sat 11am–5pm; Sun 12pm–5pm.
Mail Orders to: 800 United CD ROM Drive, Urbana, IL 61802

CONTACT US!

CompuServe: 76043,1605
America On-Line: UNITEDCD
Int'l orders 1-217-337-8532
http://www.unitedcdrom.com
Fax back 1-217-352-8123
Fax orders 1-217-337-8531

CIRCLE 407 ON READER SERVICE CARD

CADMOVER v.5

What good is a built in translator if it doesn't work?

You've worked hard and now it's time to use those files in another program. You try to import them & all you get is garbage. Not with CADMOVER. For over ten years we've been helping people beat their deadlines, no re-drawing, no touch-ups.

File formats: DWG, DXF, EPSF, PICT, CGM, IGES, HPGL, STL, MiniCAD DDES2, etc... Internal Features: scaling, 2D/3D views, font mapping and more. With 17 decimal place accuracy redrawing is a thing of the past.

KANDU software corporation

voice 800-579-2244 • fax 540-839-3489 • www.kandusoftware.com

CIRCLE 402 ON READER SERVICE CARD

Never before

have the best children's & fantasy illustrations from the Golden Age of books been available on your desktop—High Res and Royalty Free! 100 images of classic nostalgia are on each CD ROM for both Mac and PC for only *$149.00 per disk* (plus shipping).

Featuring art by Maxfield Parrish, Arthur Rackham, Jesse Willcox Smith, N.C. Wyeth and many more!

"Stunning Images!"—John C. Dvorak

Images are 72 dpi TIFFs for preview and 300 dpi RGB JPEGs for print.

Call toll-free 1-888-229-1377

Order both CDs and receive $50 off!

GOLDEN PAGES ILLUSTRATION

To see more: www.airandsky.com

CIRCLE 415 ON READER SERVICE CARD

MAP Art™

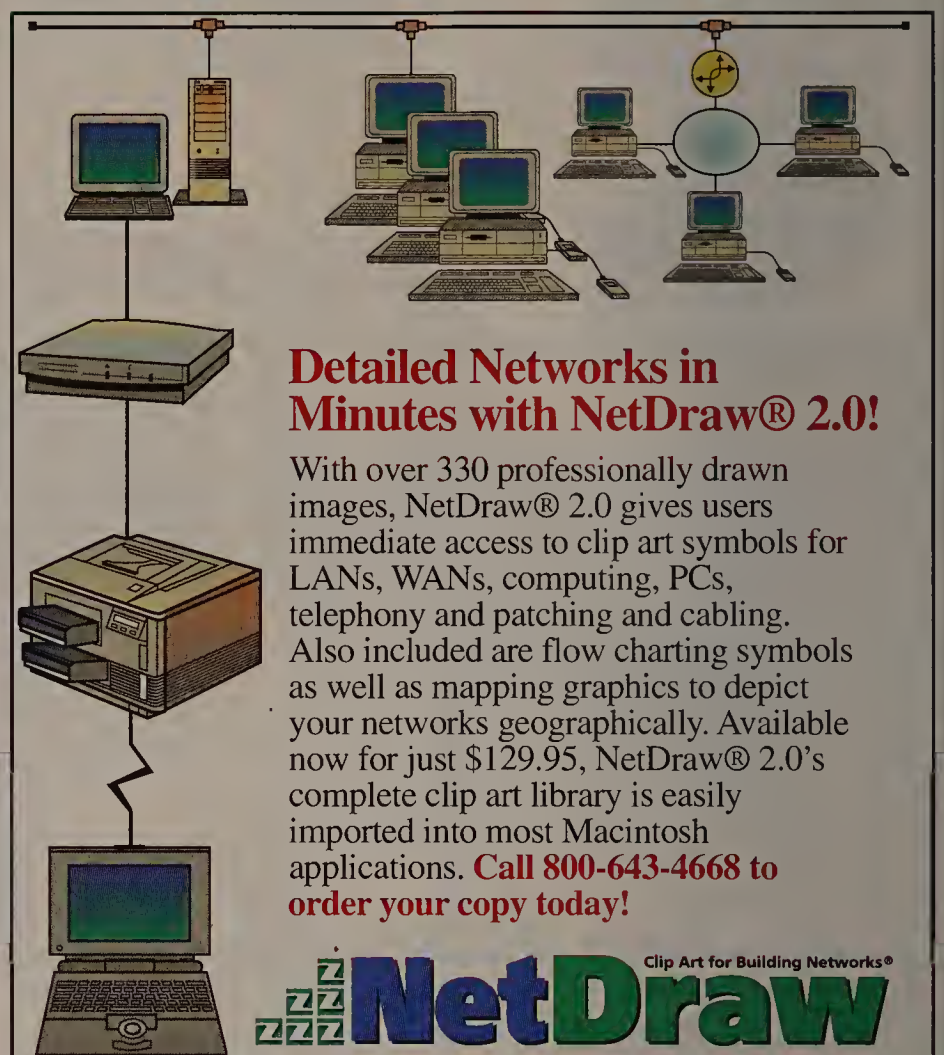
Call for our Free Color Catalog.

800-334-4291

609-397-1611
609-397-5724 Fax

www.MAP-ART.com

CARTESIA



Detailed Networks in Minutes with NetDraw® 2.0!

With over 330 professionally drawn images, NetDraw® 2.0 gives users immediate access to clip art symbols for LANs, WANs, computing, PCs, telephony and patching and cabling. Also included are flow charting symbols as well as mapping graphics to depict your networks geographically. Available now for just $129.95, NetDraw® 2.0's complete clip art library is easily imported into most Macintosh applications. **Call 800-643-4668 to order your copy today!**

Clip Art for Building Networks®

NetDraw

CIRCLE 461 ON READER SERVICE CARD

SOFTWARE SUPERSALE

ACI US
4D SERVER 1.5 ..... $869

ADOBE
ACROBAT v3.0 ..... $179

PageMaker v6.5 **$439**
Photoshop v4.0 **$439**

AFTER EFFECTS v3.0 ..... $569
ILLUSTRATOR v6.0 ..... $319
PERSUASION v4.0 ..... $233
PREMIERE v4.2 ..... $419

CLARIS
FILEMAKER PRO v3.0 ..... $159
FILEMAKER PRO v3.0 SERVER $819

COREL
CORELDRAW SUITE v6.0 ..... $339
WORDPERFECT SUITE 3.51 ..... $139

FRACTAL DESIGN
RAY DREAM STUDIO v4.1 ..... $259

MACROMEDIA
AUTHORWARE INTERACTIVE STUDIO V3.5 ..$1809
DECK II V2.5 DIGI AUDIO WRKSTAT $259
DIR. M/MEDIA STUDIO V2.0 W/ DIR 5.0 ..... $819
DIRECTOR V5.0 W/ SHOCKWAVE $755
EXTREME 3D $419
FONTOGRAPHER v4.1 ..... $285
FREEHAND 7 ..... $345
FREEHAND GRAPHIC STUDIO v7.0

Director v 6.0 Multimedia Studio **$849**
Freehand v7.0 w/ Vector Effects **$339**

SOUNDEDIT 16 v2.0 ..... $239
SOUNDEDIT 16 v2.0 PLUS DECK II $325
XRES v3.0 ..... $359

MICROSOFT
FOXPRO v2.6 PRO $389
POWERPOINT v4.0 ..... $279
PROJECT v4.0 ..... $399
VISUAL FOXPRO v3.0 PRO ED $429

Office v4.21 **$335**
Excel v5.0 **$185**
Word v6.01 **$189**

NISUS SOFTWARE
NISUS WRITER $139

QUARK
QUARK XPRESS 3.3.2 ..... $669

STRATA
STUDIO PRO v1.5 / v1.75 ..... $819/739
VISION 3D v4.0 ..... $219

HARDWARE SPECIALS

HEWLETT PACKARD
DESKWRITER 600 ..... $149
LASERJET 4MV/5SIMX $2629/3669
LASERJET 5M COLOR 10PPM 36MB ... $6819
LASERJET 5M/6MP $1659/859
SCANNER 4C/4S/5P $799/179/399
DESKJET870 CXI $465
DESKJET340C $265
DESKJETJET1600CM $1855
LASERJET 5SIMX $3665
DESIGNJET755CM $7679

PAGE COMPUTER

(888) 444-4845
4665 MELROSE AVE, L.A., CA 90029
(213)665-7777 FAX: (213)660-0444

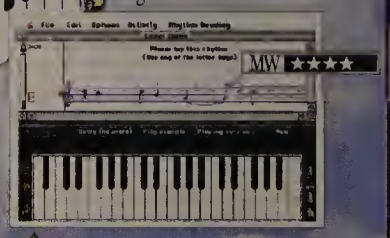
LOWEST PRICES

CIRCLE 429 ON READER SERVICE CARD

Practica Musica™ 3

Your Personal Music Tutor!

"The best music education program for the Mac" (–*MacUser*) is now available in Solo, Family, and Site editions. (retail $99, $140, and $450). The most complete music training package for both beginners and advanced students.



A LITTLE Kidmusic

NEW! Fun music learning and entertainment for kids. Tap keys to play with automatic accompaniment, play rounds, learn pitch and rhythm notation, write or record tunes. Expandable library of traditional songs. $75

ARS NOVA • (206) 889-0927 • (800) 445-4866
FAX (206) 889-0359 • www.ars-nova.com

CIRCLE 484 ON READER SERVICE CARD

MUSIC for the MAC

We sell the full range of music products for the Mac. Hard Disk Recording Specialists.

Best prices & customer support in the business!

MacBEAT®
1314 Rufina Cr. Ste. #A4
Santa Fe, NM 87505

www.macbeat.com
FREE CATALOG
☎ 505-473-3434
Fax 505-473-4647
1-800-MAC-BEAT

YOUR CD-R SOURCE!

WE HAVE THE LOWEST CD-R PRICES!

$5.49 MINIMUM 50

74M • 4X & 6X
SONY • TDK • VERB. • TYD
CUSTOM PRINTING AVAILABLE

jaz

JAZ DRIVES $419.95

4X CD-R $749

JAZ CARTRIDGE $85.95

PRESS-IT CD-LABELER $65.95

zip

CD-RW IS HERE! CONTACT US FOR DETAILS.

ZIP 6PACK W/CADDY $77.95

VISIT OUR WEB SITE FOR WEEKLY UPDATED MACWORLD SPECIALS!

MEDIA SUPPLY
610-458-9100 • Fax: 610-458-9464

800-944-4CDR
www.mediasupply.com

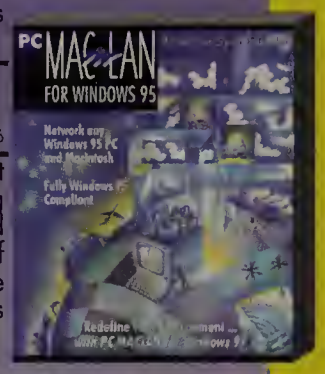
CIRCLE 413 ON READER SERVICE CARD

Finally! Windows 95 and Macs Share Files and Printers Both Ways

Workgroups and small offices can now operate as efficiently as an enterprise with **PC MACLAN for Windows 95**. Low cost, plug and play installation, Network Neighborhood and long file name support, are just a few of the features that make sharing files, volumes and printers between Macs and PCs a snap.

"For peer-to-peer networking . . . PC MACLAN 6.0 is the only choice."
— Macworld - Nov. '96

Create your own network or complement almost any pre-existing LAN. Sharing information between Windows 95 and Macintosh users is as easy as working off your local hard drive. Print jobs go to the printer of your choice regardless of its location on the network.



For ordering or information:
800-862-2526
e-mail: sales@miramarsys.com
Web: www.miramarsys.com

NOVEMBER 1996 Macworld STAR Rating ★★★★ 7.5

Miramar Systems, Inc.

Please visit us at these upcoming shows:
PC Expo — Booth # 556 *Macworld Boston— Booth # 460*

CIRCLE 431 ON READER SERVICE CARD

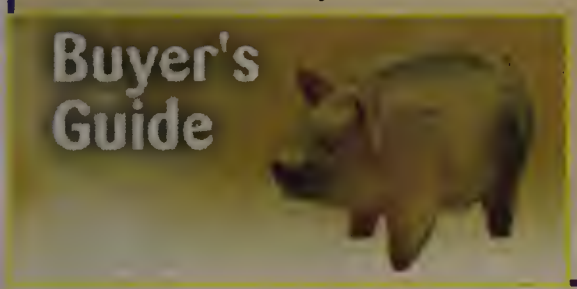
DISCOVER A NEW WAY TO SHOP!

Find exciting product offers at the Mac Shopper on

Macworld ONLINE

The Essential Macintosh Website.

www.macworld.com/buyers/shframed.htm



Contact your Macworld sales representative for details.

(800) 888-8622

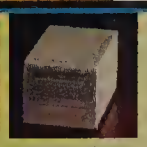
1-888-262-6289

AAA Media, inc

BACK UP SOLUTION • SPECIALIST •

http://www.aaamedia.com • e-mail • sales@aaamedia.com
TEL: 818-718-9625 FAX: 818-718-9626

4MM DAT



SONY 9000	12-24 GB	$1288
HP C1533A	4-8 GB	$928
*CDT 8000	4-8 GB	$936
AIWA 8000	4-8 GB	$758
SONY 5000	4-8 GB	$788
*ARCH. 4322	2-4 GB	$628
*WANGDAT	2.0 GB	$578
CDT 4586	16-32GB	$1458
HP C1553	24-48GB	$1758

*external pkg. Included

8 MM EXB

EXB 8200	2.3 GB	$508
EXB 8500	5 GB	$1078
EXB 8505	5 -10GB	$1378
EXB 8505XL	5-15 GB	$1718
EXB 8700	14 GB	$1048
EXB 8900	20-40 GB	$4138
SONY SDX-300/C	35-70 GB	$3788

HARD DRIVES

SEAGATE ST15150N 4.3 GB $1048
MICROPOLIS 1991A/V 9.0 GB $1798

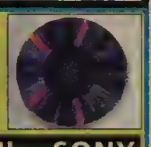
GOV / EDU / P.O.'S WELCOME!

OPTICAL DRIVE

LARGEST DISTRIBUTER OF STORAGE PRODUCTS

FUJI	230 MB	$398
HP C1716C	650 MB	$698
SONY E501	650 MB	$738
MAXOPTIX T-2	1.0 GB	$548
MAXOPTIX T-3	1.3 GB	$898
HP C1716T	1.3 GB	$1098
HP C1113F	2.6 GB	$1998
SONY F544	2.6 GB	$1988
MAXOPTIX T-4	2.6 GB	$1788

MEDIA



TDK • FUJI • SONY

4 MM	60/90M	$5.25/7.25
4 MM	120M	$18
8 MM	112/160M	$5.75/12
CDR	74M	$6.80
DLT 2/3XT/4		$39/52/99
ZIP 100		$11.70
1 GIG JAZ		$89

CALL FOR TAPE & OPTICAL LIBRARIES

MAXELL • 3M • HP

DLT

DLT 2000	10-20 GB	$2328
DLT 20XT	15-30 GB	$2678
DLT 4000	20-40 GB	$4158
DLT 7000	35-70 GB	$7678
DLT 2500XT	75-150 GB	$6978
DLT 4700	140-280 GB	$7726

BEST PRICE & QUALITY GUARANTEED • QUANITY ORDERS WELCOME!

• ALL TAPE DRIVES INCL. DANTZ RETROSPECT SOFTWARE •
• ALL DRIVES IN STOCK / TESTED BY CERTIFIED ENGINEER •

CIRCLE 412 ON READER SERVICE CARD

Macworld SHOPPER

We've got too much inventory! All new and lower prices on CD-R blanks! Buy 50 CDs at $5.99 each and we'll give you CD Stomper - the best CD labeling kit on the market - absolutely FREE!

As Low As $5.29 ea.

CD Stomper Labeling Kit: $79

NEW! RE-WRITE CDs — CD-RW Technology Is Here!
- 2X WRITE/6X READ
- REWRITE UP TO 1,000 TIMES!
- INTERNAL & EXTERNAL AVAILABLE
- GREAT DEALS ON CD-RW MEDIA

AVD CD RECORDERS — -INTERNAL $799 EXTERNAL

SOFTWARE FOR MACINTOSH OR PC INCLUDED

$699 also reads/writes CD-R discs

RECORD CDs 4x/6x write read Recordable CD — NEW! FAST!
- 2MB CACHE BUFFER
- 250 MS ACCESS SPEED
- YAMAHA INSIDE

AVD CD RECORDERS

$799 -INTERNAL fastest ever!

RECORD CDs — JAZ 1GB & CD Recorder Duo!
- 1GB JAZ & CD-R
- ALL IN 1 UNIT (2 SCSI)
- W/SOFTWARE+CABLES

EXTREME

$899 jaz/cd-r duo

AFFEX LABEL CDs — 720 dpi CD-R color printer!
- PRINTS DIRECTLY TO CDs, PAPER OR CARDSTOCK!

FREE with purchase of printer:
- 10 PIECES PRINTABLE MEDIA
- CD STOMPER LABELING KIT

$1295 limited offer 720 dpi color!

HD ARRAYS for use with Media 100 QX

6GB $1299 DataDock 8GB

- ALL ARRAYS BY MICRONET, INCLUDE POWER RAVEN SOFTWARE & ARE GREAT WITH MEDIA 100 QX!

MicroNet 4GB 5MB/sec.	$1149
DataDock 8GB* 20MB/sec., UW	$3449
MicroNet 9GB* 10.1MB/sec., UW	$2599

* = includes ultrawide SCSI Card

DUPLICATE CDs — Sidekick 5-CD Dup. System - DVD rated

call

- BATCH RECORDING!

Standalone Systems - call
MediaFORM 2001 - 25 CDs
MediaFORM 2510 - 25 CDs
MedioFORM CD-2-CD
< Rebel 4-CD - 16 CDs/hour
Rebel For Audio - DAT to CD

Product Prices and Availability Subject To Change

Ad Code: BA-107

ORDER TOLL FREE! VISA MasterCard AMERICAN EXPRESS P.O.s

800.555.5551

open M-F: 7 a.m. - 6 p.m. (PST) • intl ph. 714-974-5551

MEDIASTORE www.mediastore.com

CD Recorders	int.	ext.
AVD 4X-W/6X-R Yamaha	$799	$849
AVD 4X-W/4X-R	$699	$799
AVD 2X-W/4X-R	$399	$449
AVD 2X-W/6X-R Sony	$449	$499

JAZ/CD-R Duo	ext.
JAZ 1GB & 4X/6X Yamaha	$1,299
JAZ 1GB & 4X/4X	$1,249
JAZ 1GB & 2X/4X	$899
Fast Audio Capture & CD Copy 4X-W/12X-R	$1,199

Media

Syquest Comp. 44MB	$33	128MB Optical	$9.99
Syquest Comp. 88MB	$37	230MB Optical	$14.99
Syquest 135MB	$19.99	640MB Optical	$27.99
Syquest Comp. 200MB	$69	650MB Optical	$29.99
Syquest 270MB	$55	1.2GB Optical	$24.99
ZIP 100MB	$14.99	1.3GB Optical	$39.99
JAZ 1GB	$95	2.6GB Optical	$69.99
DLT 10/20GB	$39.99	1APEX 4.6GB Optical	$169
DLT 15/30GB	$44.99		
DLT 20/40GB	$106.99		

comp. = compatible with Syquest brand media

Data Storage	int.	ext.
JAZ 1GB Drive + Cartridge	$399	$499
Nikon Beluga 2.6GB LIMDOW	$1,699	$1,799
Pinnacle Micro APEX 4.6GB		$1,565

CD-R Software	
CD-DA Professional Audio CD Mastering	$399
CD COPY Copy any data or audio CD	$199
M-PACK MPEG Encoding Software	$399
TOAST 3.0 #1 CD Writing Software	$299
MASTERLIST Pro Audio CDs by Digidesign	$499
AUDIOMEDIA III Mac PCI Audio I/O Card	$699

CIRCLE 471 ON READER SERVICE CARD

Custom ULTRA SCSI Products

SCSIVue™ Active Terminator

From: $59

Benefits:
- Improves SCSI Bus Performance
- Less Errors; More Reliable Data Transfer
- Diagnoses Problems • Analyzes Signal Quality

Features:
- Active Regulation • Fast 50 & Fast Wide 68
- Status Indicators • Gold Contacts

SCSI 2+3 COMPATIBLE — Optional Remote Display

Active 2-1 SCSI Switch / Repeater

From: $599

Benefits:
- Up to 14 Devices to 1 Computer
- Share Devices Between 2 Computers

Features:
- 2-1 Active Digital Switch/Repeater
- Regenerates SCSI Signal for Long Runs

Gold Diagnostic Adapters

From: $39

Styles:
- 68 Pin Drive to 50 Pin IDC (runs wide drive as narrow)
- 68 Pin External Adapter to 50 Pin (converts Host Adapter)
- Gender Changers both 50 and 68 pin (all combinations)
- Adapters with partial termination for 68 to 50 converters

Gold External Ultra SCSI Cases

- Ultra SCSI Custom Teflon Cable Available
- Custom Enclosures in 1 Day for Raid & Arrays

2 Bay Tower — 3.5" & 5.25" Case Kits — 8 Bay Tower — 4 Bay Tower

From: $29

NEW Accessories!
Bay Cooler Kit keeps those HOT Ultra SCSI Drives COLD as ICE! Dual Fan & Bracket
HOT SWAP Pull Out Bays Compatible with all 50 pin & 68 pin SCSI Buses
From: $79.00 up to Fast SCSI 2.

SCSIVue™ Gold Cables

From: $39

Features:
- Triple Shielding (Unique Design)
- Double Gold 20u" Plated Connectors
- Diagnostic Indicators • Large Ferrite Filters
- Extra Heavy 26 Gauge Wire • 100 Styles in Stock

Custom Teflon® Internal Cables

® is a registered trademark of DuPont

Benefits:
- Less Errors, Ultimate Performance
- Silver Wire Improves Signal Quality

Features:
- Perfect 90 Ohm Impedance • Custom in 1 Day
- Triple Pronged Connector - Gold contacts Silver Wire

From: $39

Active Digital SCSI Repeater

From: $149

PS Included

Benefits:
- Models for all SCSI types
- Fixes SCSI Cable Problems
- Doubles Cable Length (up to 18')

Features:
- Active Termination and Signal Purification
- Ultra Fast Performance for Added Capabilities
- Diagnostic Capabilities • 30u" Gold Contacts

Teflon® 90 Ohm External Cables

From: $159

Benefits:
- Ultra SCSI 40 MB/s operation
- Fixes Ultra SCSI Cable Problems

Features:
- Perfect 90 Ohm Impedance Match
- Triple Pronged Connector With Gold contacts

SCSI Cable Tester - LED Readout

This Digital SCSI Cable Tester can test all the popular cable styles for opens, shorts, and unreliable operation. Battery powered for easy use.

Three models to choose from:
- 50 pin IDC
- 50 pin Centronics
- 68 pin MicroD

From: $49

Online Catalog at.. www.scsipro.com

Granite D•I•G•I•T•A•L

The SCSI Solution Company
Ph: 510-471-6442 Fax 510-471-6267
3101 Whipple Rd. Union City, CA 94587

CIRCLE 408 ON READER SERVICE CARD

The source for supplies — Since 1981
http://www.disketteconnection.com

CD-R's
Verbatim
TDK ..... Call

Zips • Free rack
in Sony
6 pack . $13.75

Optical Disks
230MB
w/case . $10.50

CD-R access.
Jewelcases . . . Call
20 Labels . . . 3.50
Marking pen . 3.99

Jaz Disks
1GB
MAC . . . $88.00

128MB
w/case . . . $9.25
1.2GB/512 . . $ 43
2.3GB/512 . . $ 65

EZ-135 SyQuest
cartridge
by Maxell $18.95

DDS-2 Maxell
4mm
120m . . $17.25

LsrWr. Pro 600
toner
cart. $80.25

PD-650 Drive
External
w/cart. . . . Call

PD-650 Disks
MAC
5+. $29.35

SW 2400
JetFill
Blk BCI-21 . $5.79

DisketteCONNECTION 1-800-654-4058

Visa/MC/Discover • ph 405-789-0888 • fax 405-495-4598 • 7-7cst, M-F

CIRCLE 485 ON READER SERVICE CARD

macally

We work hard for your Mac™

Call us for the Dealers near you

Please call today: 1- 800 - 644 -1132

http://www.macally.com

CIRCLE 403 ON READER SERVICE CARD

The Easiest Way To Label Your CD-R Media

With our easy to use hardware and software designing CD Labels like these is a snap!

COMPLETE CD LABELING SYSTEM INCLUDES:

- *1 Interactive CD-ROM* with over 1200 Clip Art Images.
- 1 CD Stomper Label Applicator Perfectly Centers Your Labels Every Time.
- 100 Blank Labels in Assorted Colors, Laser and Ink Jet Ready.
- Mac & PC Templates for all major applications.

The Original

CD STOMPER

The Professional CD Labeling Kit For Everyone

Phone: 714.250.6771 . FAX: 714.250.6775

http://www.labelcd.com

Dealer & Distributor Inquiries Welcome

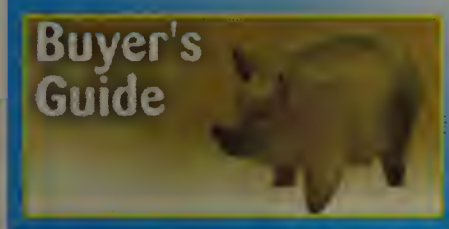
SATISFACTION GUARANTEED!

ORDER TOLL FREE 1.888.LABEL.CD

CIRCLE 406 ON READER SERVICE CARD

There's a New Way to Shop on the Net! Use the Mac Shopper at: Macworld ONLINE

www.macworld.com/buyers/shframed.htm



Contact Macworld on how to advertise.

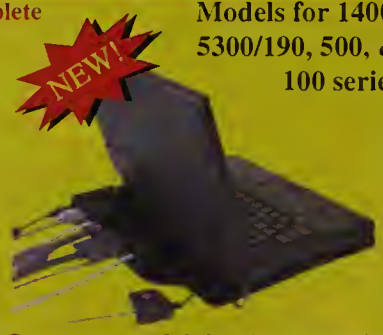
(800) 888-8622

BookEndz™ PowerBook™ Docking Stations

Slide in to convert your PowerBook to a complete desktop system, slide out for portability!

- Eliminates the need for a desktop computer
- Fast, reliable connections every time
- Dock/undock in seconds
- Low cost
- Eliminates cable confusion
- Supports all rear ports
- Adds only 3" to rear of PB when docked

- *Free* NoteBook Enhancements Catalog
- Foreign telephone adaptors
- Monitor stands



Models for 1400, 5300/190, 500, & 100 series

Orders: 800-682-4987

Pilot Technologies, Inc., Minneapolis MN Tel: (612) 828-6002 Fax: (612) 828-6806
URL http://www.pilot-tech.com/ Email Address: pilottech@aol.com

CIRCLE 419 ON READER SERVICE CARD

Macworld never goes by ... lowest prices ... always look to our ... Center Computer Consultants

Macworld SHOPPER

PACIFIC COMPUTER EXCHANGE

Used Macs Priced to Move

800.790.3881 ORDERS & PURCHASING INFO

We buy and sell used Macs!

Cash paid for your Mac via Fed Ex!

Apple 15"/MS16"RGB	$299/499	PowerBook 140/145	$499
NEC 14"/CTX 17"	$229/549	PowerBook 160/170	$599
Image Writer II	$169	PowerBook 1B0/1B0c	$799/1099
DeskWriter	$179	PowerBook 520/540	$1099/1299
Portable DeskWriter 320	$199	LC/LC II/LC III	$199/249/299
Portable Color SW 2200	$199	IIsi/IIcx	$299
Color SW 2400/2500	$199/219	IIci/IIvx	$3B9/399
LaserWriter IIntx w/toner	$499	Quadra 605/610	$499/549
LW Select 360 w/toner	$699	Centris 650/660av	$699
PB screens for 100 series	CALL	Quarda 840av 16/230 CD	$B99
PB disk drive for 100 series	$B9	PPC 6100/66 B/250 CD	$799
Plus/SE FDHD	$99/199	PPC 7100/66 8/250 CD	$B99
SE 30/Color Classic	$399/499	PPC 7200/90 8/500 4xCD	$999

Many More Macs & PowerMacs in stock! Please Call!

SPECIAL! New Reno 2X External Portable CD Rom $89

CIRCLE 451 ON READER SERVICE CARD

MacBYTE

NO PAYMENT FOR 6 MONTHS!

BUY • SELL • TRADE

- CASH FOR MACS
- NEW & USED MACS WITH WARRANTIES
- FEDEX OVERNIGHT SHIPPING

Visa/Mastercard/Amex/Discover
Diners Club/COD
Local Area On-Site Consulting

800-432-2983

4223 Glencoe Ave., Suite C200
Marina del Rey, CA 90292
FAX: 310-448-4194
E-MAIL: MacByte@aol.com

CIRCLE 428 ON READER SERVICE CARD

Apple CD600i Internal

- 4x CD-ROM
- External Case only $50
- Tray Loading

NEW! $99

* Mounting Kit Not Included
Most Machines only $20

Global Village 33.6 Speaker Phone

- 33.6 Data/Fax Modem
- Global Fax software
- Internet Edition $149

NEW! $179

MacWorks 800-482-2705

"Low Prices, Great Service...That's The Deal!"

Voice 913-599-6227 • Fax 913-599-6111

CPUs: NEW	
PowerMac 4400/200 - 16/2GB/8xCD/key.	$1649
PowerMac 7300/180 - 16/2GB/12xCD/key.	$2299
WorkGroup Server 7250 - 16/1.2/CD/AppleShare	$1899
WorkGroup Server 7250 16/1.2/CD/Internet	$1699
WorkGroup Server 95 32/230/500/DAT	$999
WorkGroup Server 80 - 16/1000/CD/DAT	$1099
WorkGroup Server 60 - 8/230	$699
Centris 660av - 8/80 NEW FACTORY SEALED!	$499
MONITORS:	
AppleVision 1710AV - Trinitron	$799
ACCESSORIES:	
Atlantic Technology Speakers - Sub/Sat System	$129
Apple Design Speaker - 1/11	$69/$49
Global Village Platinum - 33.6 Internet Edition	$149

USED	
Performa 640 DOS - 12/500/CD	$699
Quadra 605 - 8/80/Ethernet	$399
Quadra 610 - 12/230/CD/Ethernet	$549
Mac IIsi Bundle - 5/80/13" RGB/key.	$349
Mac IIcx Bundle - 4/80/Video/13" RGB/key.	$379
Mac IIci Bundle - 4/80/13" RGB/key.	$399
PowerBook Duo 230 - 12/120/14.4	$429
PowerBook Duo 250 - 12/200/14.4	$599
PowerBook Duo 2B0c - 12/320	$999
PowerBook Duo Dock II - 1MB VRAM/Ethernet	$299
Macintosh Color Display - Trinitron Display	$229
Imagewriter II - Dot Matrix	$149
LaserWriter IInt - 300 dpi	$299
LaserWriter IIntx - 300 dpi	$399

PARTS & ACCESSORIES	
Manual Inject Floppy - with exchange	$49
Auto Inject Floppy - with exchange	$79
6100 DOS Card - Full Kit	$149
Apple MPEG Card - for 630/6200/6300/5200	$49
PB 190 Video Out Card - 8-bit color	$79
PB 190 Infrared Card - Upgrade	$39
Apple ADB II Mouse - round design	$49
Apple Design Keyboard - refurb/new	$59/$79
PowerMac AV Card - for 6100/7100/8100	$249
PB 500 BMB/Duo BMB - RAM Module	$39
610/6100 Power Supply - with exchange	$59
IIcx/650/7100 Power Supply - with exchange	$69
Duo Dock Power Supply - with exchange	$99
800/840/8100 Power Supply - with exchange	$109

Quadra 610 Bundle 12/230/CD/Ethernet

- 14" Apple Trinitron
- 25 Mhz 68040
- 8MB RAM
- 230 MB Hard Disk
- 2x CD-ROM
- USED 30 Day Warranty

* Keyboard Included

$749

Apple Duo Dock Plus

- 1 Year Warranty
- 1MB VRAM
- Built in Ethernet
- Fits All Duos

NEW! $429

ATTENTION POWERMAC 7500, 7600, 8500 AND 9500 OWNERS!

Apple 604/120 Upgrade Card

- PowerPC 604
- 120 Mhz
- User Upgradeable Card
- Includes Install Guide

*Add a 512K Cache for only $99

NEW! $79

Apple 604/132 Upgrade Card

- PowerPC 604
- 132 Mhz
- User Upgradeable Card
- Includes Install Guide

*Send in your original working Apple 604 card for a $25 credit!

NEW! $99

Apple 604/150 Upgrade Card

- PowerPC 604
- 150 Mhz
- User Upgradeable Card
- Includes Install Guide

*Send in your original working Apple 604 card for a $25 credit!

NEW! $199

SEE OUR WEB PAGE FOR FULL LINE OF PRODUCTS e-mail: sales@macworks.com • web: http://www.macworks.com/ • Prices Subject to Change • All Prices Represent 2% Cash Discount • We only ship FedEX • *Denotes Refurbished or Used

CIRCLE 444 ON READER SERVICE CARD

Super Discounts

OPEN TO THE PUBLIC

Powermacs

9600/200 32/4gb cd	3269
9500/180mp 32/2gb	2999
8600/200 32/4gb cd	2949
8500/180 32/2gb cd	2199*
7600/132 16/1gb cd	1649
7300/200 32/2gb cd	2450
7300/180 16/2gb cd	1999
7200/120 16/1gb cd	1189
4400/200 16/1.2 cd	1550

MACS FIXED AND UPGRADE FAST
Memory & Disk drive
Modems & SCSI cables
mouse & keyboards
Battery & Installations

64MB	345
32MB DIMM	179
16MB OR SIMM	85
08MB	59

Powerbooks

3400c/200 16/2gb cd	4959
3400c/180 16/1.3	3889
1400c/133 16/1g cd	2979
1400c/117 16/1g cd	Call
1400cs 12/750 cd	1849
1400cs 12/750	1599
2300C 8/750	1399
5300c/5300cs/520	Call

Monitors

Sony 17"	669
Sony 20"	1589
Apple 1710AV	849
Apple 1710	739
Apple 1705	629
Apple 15"	379

Performa

6500/250 32/4gb zip	2289
6400/200 16/2GCD	1399
6400/180 16/1GCD	999*
6360/160 16/1GCD	1099
6300 / 6200 / 5200	Call

Printers & Scanners
Umax/Agfa
HP/Epson
Apple
SW 1200 $109*

order today (818)505-8991
QUOTATIONS BY FAX (818)505-8992
online planetek.com/maccity

MAC CITY
THE MAC STORE

INTERNATIONAL ORDERS ARE WELCOME
NO TAX OUTSIDE CALIFORNIA
ALL PRICES REFLECT C.O.D CASH DISCOUNT
Prices are subject to change w/o notice

11026 Ventura Blvd Studio City ,CA 91604

CIRCLE 442 ON READER SERVICE CARD

MacGlobal

SYSTEMS AND PERIPHERALS • SALES AND SERVICE

Performas	PowerBooks
410/466/476 Call	160/165/170/180 Call
550 5/160 $799	150 4/240 $550
580 5/500/CD $800	520 4/240 $750
631 8/500/CD $650	520C 4/240 $1,325
6116 8/700/CD $850	540C 4/320 $1,750
5200 8/500/CD $1175	

Quadras
630 8/250 Call
650/800/840/950 Call

Power Macs
7200 8/500 Call
7500 16/500 Call
8500 16/500 Call

Memory
4 MB 72-pin $40
8 MB 72-pin $75
16 MB 72-pin $115

Printers
Stylw II $185.00
Stylw 1200 $175
Laser 300 $285
Laser 320 $490
Laser 4/600 Call

Monitors
14" Color $195
15" App. Multi. $300
17" Radius Trin. $675
20" GS $540

We Buy!

WE REPAIR MACS!

TOP DOLLAR paid for memory, PowerBooks and CPUs!

[800] 722-8864
Phone: [408] 268-3300
Fax: [408] 997-1400

MacGlobal

CIRCLE 479 ON READER SERVICE CARD

POWERMAC	
7300/180	$2299
7300/200	$2699
8600/200	CALL
9600/200	CALL
7200/7600/8500/9500/	CALL
PRINTERS	
LWRITER 12/640	CALL
LWRITER 4/600	$889
HP 6MP	CALL
HP 1600 C/PS	CALL
HP 4MV	$2699
STYLEWRITER 1500	CALL
STYLEWRITER 2500	$349
DESKWRITERS	CALL
POWERBOOK	
1400CS/12/750	$1999
1400CS/16/750CD	$2299
1400C/117	CALL
1400C/133	CALL
UMAX / SUPERMAC	
S90L	CALL
S900D	CALL
SCANNERS	
MICROTEK SCANNERS	CALL
VISTA/S6E SOHO	$279
POWERLOOK II	$1829
HP SCANJET 4C	$819
EXPRESSION 636	$1389
AFGA SNAPSCAN	$329
AFGA ARCUS II	$1589
MONITORS	
APPLE 1710AV	$899
APPLE 1705	$695
CPD200SF2	$799
PRECISION 17"SR	CALL
PRECISION. 21"SR	$3299
THUNDER COL.	CALL
CPD 15SF	CALL
NEC	
NEC 17XV	$779
NEC 17XP	CALL
NEC 21XE	$1899
NEC 21XP	$2199
Performas	
6360	$1499
6400/180	CALL
6400/200	CALL
APPLE SUPERDRIVE	$149

INTERNAL / WITH EXCHANGE

COMPUTER REVELATIONS

COMPAQ HEWLETT PACKARD Tektronix
FUJITSU Microsoft radius and more !

POWERBOOK 3400's
MOTOROLA STARMAX 3000 & 4000 SYSTEMS
Are Here Now !
See Us For All Your Software Needs!

COMPUTER

CALL ABOUT MEDIA 100

ALL APPLE PARTS & ACCESSORIES IN STOCK
Rentals / Service available in NYC area
CALL US FOR ALL OF YOUR LEASING NEEDS !
1 800 275-9924
in NY 516 737-0800
FAX 516 737-0923
331E DANTE COURT HOLBROOK NY 11741
NEW & USED BOUGHT & SOLD
Ask about our EXTENDED WARRANTY

CIRCLE 474 ON READER SERVICE CARD

voice: 510-689-9488 fax: 510-689-9487 PRICES & QUANTITIES SUBJECT TO CHANGE Place Your Orders OnLine!

1-888-447-3728 • MacResQ • www.macresq.com

Toll Free

Perf.640 DOS 12/500/CD/DOS $699† (cpu only!)

Mac OS

PARTS,PARTS,PARTS!!

CD 600i+ (tray) NEW!	$99
CD 1200i+ (tray) PULLS	$179
(these are Internal- we can put them into an external case(non apple) for $60 (w/cables)	
mounting kits avail- call for prices!	
Manual inject floppies (661-0121)**	$49†
Auto inject floppies (661-0474)**	$79†
120 mhz PM processor upgrade cards	$99
132 mhz PM processor upgrade cards	$129
80 MB 3.5" SCSI hard drives (internal)	$29†

PRINTERS:

StyleWriter 1200	$169
Color StyleWriter 2500	$249*

APPLE MONITORS:

12" GreyScale Display	$129*
13" RGB Display	$199†
14" Performa Plus Display	$199†
15" Multi-scan Display	$325*
17" Multi-scan Display	$499†
SuperMatch 21 txl	$1199*

POWER SUPPLIES:**

LC thru Q 605	$19
Mac II cx/ci/ Q 700	$49
Q 800 / PM 8100	$109
PM 8500 / 9500	$129
Duo Dock	$69
Q 900 / 950	$129
PM 6100 (EXCH.ONLY)	$89
PM 7100 (EXCH. ONLY)	$69
II SI	$79

APPLE POWERBOOKS

540c 12/320/19.2	$1499†
540 12/500/19.2	$999†

DUO SERIES

250 12/200/14.4	$599†
280 12/240/14.4	$749†
280C 12/320/14.4	$999†
2300C 22/750	$1249*
Duo Dock I	$199†

SCREEN UPGRADES

520 TO 520C	$299

APPLE DESIGN SPEAKERS- I'S $69, II'S $49

Apple CD ROM'S ! 2x,4x,8x from $99 ea!!

Duo 250 12/200/14.4 $599†!

Apple 17" Multi-scan $499†

Performa 630 8/500/CD (cpu only) $549†

Complete Color Systems ! IIsi 5/80 $349, IIcx 4/80 $379, IIci 4/80 $399 All come with 13"RGB & kybd !!! (used)

Mac·Res·Q.

†= Used, 90 Day MacResQ Warranty • * = Refurbished (90 Day Warranty) • All Parts Sold With a 90 Day MacResQ Exchange Warranty • ** = Exch. Required For Orders of 10 or Less • All Major Credit Cards With NO Surcharge. •

CIRCLE 437 ON READER SERVICE CARD

CIRCLE 436 ON READER SERVICE CARD

http://www.poweron-line.com

WOW ... Package Deals

Buy ANY CPU... Add a 17" monitor for 200.00

P631 4/0/CD (U)	399.00
P631 8/850/CD/14.4 w/key (U)	599.00
P6116 8/700/CD w/keyboard (R)	749.00
P6205 8/1.2/CD w/keyboard (R)	799.00
PM7200-90 8/500/CD (R)	899.00
PM5260 16/800/CD/15" (R)	999.00
P6320 16/1.2/CD/28.8 w/key (R)	999.00
Mac SE 4/160 w/keyboard (U)	149.00
Mac IIcx 4/160 w/keyboard (U)	149.00
Mac IIci 4/160 w/keyboard (U)	249.00

PowerComputing, Motorola, UMAX

*Prices include 3% cash discount.

Trinitron™ Super Sale

17" Hi-Res. Trinitron (R)	325.00
17" Std.-Res. Trinitron (R)	285.00
Apple 15" MultiScan Monitor (R)	289.00
Apple 13" RGB Color Monitor (U)	179.00
LaserWriter *IINT/IINTX* (U)	299.00/399.00
StyleWriter 1200 B/W Ink-Jet (R)	119.00
Apple ImageWriter II w/cable (U)	99.00
Apple 1.44 FDHD *Pull/New*	79.00/99.00
Int. *40/160* MB HDs(N)	25.00/65.00
Int./Ext. 12x CD-ROM (N)	119.00/159.00
Radius Mouse, ADB (N)	16.50

POWER ON COMPUTER SERVICES

(800) 673-6227 (916) 652-1880 • (916) 652-1881 FAX

MAC CARE, Digital Video & PrePress Specialists

800-429-7779

Tel: 714-574-3939
Fax: 714-574-3947
Email: Clucero126@aol.com

3101 W P.C.H., Suite 150
Newport Beach, CA 92663

PowerMacs

9600 200MMP 32/2G/CD/Kybd	$2875
9600 200MHz 32/4G/CD	$3475
9500 200MHz 32/2G/CD	$2995
9500 180MP 32/2G/CD	$3625
8600 200MHz 32/2G/CD	$3195
8500 180Mz 32/2G/CD	$2995
7600 132MHz 16/1G /CD	$1895
7300 200MHz 32/2G/CD	$2650
7300 180Mz 16/2G/CD	$2225

Imagesetters

WE Purchase used Imagesetters

Imagesetters • AGFA • Linotype • ECRM

New & factory refurbished. WE PURCHASE USED IMAGESETTERS!

Why purchase Power Computing?

9500/9600 • Dual 200Mhz • 128M Ram • ViewSonic 800GT • 2G 7200RPM • IMS Twin Turba • Adabe Photashap • Illustratar • Global Villoge • Freehond • Keybaord $6775

9500/9600 • Dual 200Mhz • 32M Rom • ViewSonic800GT • 2G 7200RPM • IMS Twin Turbo • AdabePhatashap • Illustrotor • Global Villoge • Keyboard $4775

9500/9600 • Dual 200Mhz • 128M Rom • ViewSonic • After Effects Pro • 2G 7200RPM • IMS Twin Turbo • Photoshop • Globol Village • Teleport 33.6 • Keyboard $6775

Call us and find out! ASK about our bonus !

SilkScreening System

Imagesetter - Agfa or LinoType 18" Wide

- Includes RIP
- Adobe Postscript
- 2400 DPI
- Factory Refurbished
- Call for New & Refurbs!!

$15,000

Pre Press System

COMPLETE COLOR PRE PRESS SYSTEM

Incudes Power Mac 7500 24/1G, 17" Color Monitor, Software, Ex Keybd., AGFA Color Scanner, Color Proof Printer, Imagesetter w/Rip & Processor.

BROADCAST QUALITY!!

$16,950

Targa VideoStation

PM 7300/200MHz – 48MB/2GB/CD

Targa1000 PCI, Adobe Premier, Apple 15" Color Monitor, Ext. Keyboard, 4.2GB Audio Video, Adobe After Effects v3.0, Borris Effects.

$6995 Entree level

DayStar Bundle

GenesisLT 400+ (dual 200 MHZ) 32M/2G/CD/8M VM

Adobe Premier 4.2, Adobe After Effects 3.1, 17" Monitor, Ext. Keyboard

$6245

BLAZING EFFECTS!

Adobe After Effects
Ultimatte
Metatools
Studio Effects
Final Effects
Light Wave 3D
Form • Z
Electric Image
All Plug-ins
Adobe Photoshop
Pagemaker
Illustrator

Radius VideoVision SP

GenesisMP 800 128M/2G/CD/4M VM

17" Monitor, Extended Keyboard, 4G Hard Drive, Micranet 8G Array, Adobe After Effects !!! CALL FOR THE 800+ AND 900

$Call for Mac Care Special

MicroShere Station

Experience the creative freedom with the most prominent video pioneers in the industry. Scitex introduces real time effects, dual stream video, Blows away the Pinnacle Aladin, max 360k per from, edl import and much more!

SCITEX DIGITAL VIDEO

$Bundle Package 21,500

Media 100qx

MEDIA 100 AUTHORIZED RESELLER

7600/132 – 32M/1G/CD

Adobe Premier 4.2, After Effects 3.0, 17" Monitor, Keyboard, 4100 w/SCSI Wide Array, Vicent Component

$10,375 $1500 REBATE

Media 100QXC

MEDIA 100 AUTHORIZED RESELLER

9500/200MHz 128MB/2G/CD

After Effects 3.0, 17" Monitor, Keyboard, 4100 w/SCSI Wide Array, Vicent Component, Batch Digitizing, & Accelerated Effects

$12,375 $1500 REBATE

CIRCLE 405 ON READER SERVICE CARD

DATA MICRO COMPUTER INC.

3847 GRANDVIEW BLVD
LOS ANGELES CALIF 90066

800•345•1234
TEL(310) 398•3300
FAX(310) 391•2488

HTTP://WWW.DATAMICRO.COM
DEALERS & INTERNATIONAL SALES WELCOME!
Govt, Univers.'s & Corp. P.O.'s welcome
Prices subject to change without notice

QMS · RasterOps · LaserMaster · GCC Technologies · UMAX · radius · Hewlett Packard · SuperMac

PowerMAC

		Sale	Lease
6100/66	8/500/CD	795	22
6100/Dos	16/500/CD	995	27
4400/200	16/1G/CD	1485	41
7100/80	8/700/CD	1295	35
7200/120	16/1G/CD	1175	32
7300/180	16/2G/CD	2059	57
7300/200	32/2G/CD	2399	66
7500/100	16/500/CD	Call	Call
7600/132	16/500/CD	1495	41
7600/132	16/1G/CD	1626	45
8500/120	16/1G/CD	1495	42
8500/150	16/1G/CD	1975	54
8500/180	32/2G/CD	2399	66
8600/200	32/2G/CD	2885	79
9500/132	16/1G/CD	Call	Call
9500/150	16/2G/CD	2189	60
9500/MP	32/2G/CD	3499	96
9500/200	32/2G/CD	2949	81
9600/200	32/4G/CD	3289	91
9600/MP	32/4G/CD	4282	118

SCANNERS

Any Brand Scanner — Call for Price

PERFORMA

6116	8/700/CD	739
6116	Dos 16/700/CD	995
5200	8/500/CD/15"	949
5215	16/1G/CD/15"	1095
5320	16/1G/CD/15"	1295
5400	16/1G/CD/15"	Call
6200	8/1G/CD/Ref.	889
6220	16/1G/CD/TV	959
6300	16/1G/CD	965
6360	16/1G/CD	1039
6400/180	16/1.6G/CD	1095
6400/200	16/2.4G/CD	1629
6400/200	32/2.4G/CD/zip	1958

DIGITAL

Media 100qx	3995
Bravada 1000	629
Targa 1000 PCI	1789
Targa 2000 PCI	2698
IMS Twin Turbo 8mb	595
Kodak DC 50	859
Kodak DC 25	459
Apex 4.6 Opitcal Drive	1685
Any Raid Array HD	Call

POWERBOOK

190 cs 8/500	1295
1400cs/117 12/750	2295
1400cs/117 16/1G/CD	2695
1400c /117 16/1G/CD	3495
1400c /133 16/1G/CD	3749
2300c 8/750/Modem	1279
2300c 20/1G/Modem	1679
3400c180/16/1G	4060
3400c180/16/1G/CD	4495
3400c200/16/2G/CD	4960

UMAX

C500/160 16/1.2G/CD/KB	1149
C600/180 16/2G/CD/KB	1429
C600/200 16/2G/CD/KB	1695
C600/240 24/2G/CD/KB	1975
J700/150 16/2G/CD/KB	2049
J700/180 24/2G/CD/KB	2349
S900/180 32/2G/CD/KB	2975
S900/200 32/2G/CD/KB	3145
S900/225 32/2G/CD/KB	3595
S900/180MP 32/2G/CD/KB	4275
S900/200MP 32/2G/CD/KB	3595

PRINTERS

LaserWriter 16/600	2045
Color L.W. 12/660	4995
L.W. 12/640	1495
L.W. Select 300	475
Personal 320	595
Personal 300	395
StyleWriter 1500	198
StyleWriter 2400	249
StyleWriter 2500	269

STARMAX

Desktop Version

3000/160 16/1.2G/CD	1195
3000/180 16/1.2G/CD	1295
3000/200 16/1.2G/CD	1549
4000/160 16/1.2G/CD	1595
4000/200 16/1.2G/CD	2189

Tower Version

3000/160 32/2.5G/CD	1249
3000/180 32/2.5G/CD	1449
3000/200 32/2.5G/CD	1695
3000/240 32/2.5G/CD	2195
4000/160 32/2.5G/CD	1725
4000/200 32/2.5G/CD	2395

MONITORS

Apple Multiscan14"	294
Apple Multiscan15"	385
Apple 17" (1705)	649
Apple Multiscan20"	1599
Radius 15" GS	199
Radius Pivot 15" GS	295
Radius Pivot 15" Clr	369
Radius 21" GS	777
Radius 17"	745
Radius Precision 21"	1495
Radius Intellicolor 20"	1299
Radius 21 TXL	1595

We Specialize in business Leasing

Call for Hewlett Packard Microtek Epson, Kodak Agfa, Daystar ATI, Software and more

CIRCLE 464 ON READER SERVICE CARD

MACS & POWERBOOKS WANTED

TOP $$$ PAID

MAC Solutions
1416 Wilshire Bl.
Santa Monica, CA 90403
www.macsolutions.com

Any Quantity
Fast Turnaround
Trade Ups Welcome
FedEx check delivery available
We Buy, Sell & Trade
New & Used Macs

(800) 80-WE-BUY
Tel:(310) 394-0001 Fax:(310) 394-7744

CIRCLE 473 ON READER SERVICE CARD

USED COMPUTERS

The Computer Exchange

"We match buyers and sellers of used MACS nationwide."

Classic to PowerPC

Call for More Info

800-304-4639

404-898-0700 www.compexch.com
205 Armour Dr. NE, Atlanta, GA 30324

CIRCLE 460 ON READER SERVICE CARD

HAWKE BUSINESS SYSTEMS

A Division of the CPS Services Group
Flemington, NJ 08822

(800) 875-2610
Fax - (908) 782-7027
Email - MacHawke@AOL.COM

We Buy, Sell, Trade & Repair Mac Equipment

6 Month Parts & Labor Warranty

Mac Se 4/20 800k w/K&M	$199.00
Classic 4/40 w/K&M -	$299.00
Classic II 4/80 w/K&M -	$349.00
Mac Se/30 4/80 w/K&M -	$399.00
Color Classic 4/80 w/ K & M	$Call

800K Internal Floppy -	$39.00
1.4 Meg Internal Floppy (w/t)	$89.00
Se & Se/30 Power Supply -	$39.00
Refb Apple Ext II Kyb Mechinism -	$45.00
ImageWriter II -	$149.00
LaserWriter IINT	$349.00

New RAM - Lifetime Warranty
30 Pin - 72 Pin - DIMMs - PowerBook

Wide Selection of Other Repair Parts for Mature Mac Computer and Perpherials

Mac IISi 5/80 w/ Ext Kyb, Mouse and Apple Hi-Res Color Monitor	$499.00
Mac IICi 8/160, w/ Ext Kyb, Mouse and Apple Hi-Res Color Monitor	$599.00
Mac LC III 4/80 w/ Ext Kyb, Mouse and Apple Hi-Res Color Monitor	$599.00
PM 6100/60 8/250/cd w/ Ext Kyb, Mouse and Apple Hi-Res Color Monitor	$1099.00
PM 6205/75 16/1.2/cd w/ Ext Kyb, Mouse and Apple Hi-Res Color Monitor	$1299.00

CIRCLE 457 ON READER SERVICE CARD

MAC PROFESSIONAL INC.

800.244.4622

SCHOOL / U.S.GOV'T & CORPORATION P.O.'S WELCOME

ALL PRICES ARE CASH DISCOUNTED.WE ACCEPT VISA / MC / DISCOVER / AMEX

POWER MACS

7300/180 16/2GB-12xCD/kybd	$ 2050
7300/200 32/2GB-12xCD/kybd	$ 2390
8600/200 32/2GB-12xCD/kybd	$ 3099
9600/200 32/4GB-12xCD/kybd	$ 3395
9600/200MP 32/4GB-12xCO/kybd	$ 4395
9600 / 233 NEW	CALL
4400 / 200 16 / 1.2 - CD KYBD	CALL
6500 / 225 32 / 3GB - CD 33.6	$ 1949
6500 / 250 32 / 4GB -CD ZIP	$2099

UMAX COMPUTER

S900/250 32/2000-8xCD-ZIP	$ 4399
S900/233 32/2000-8xCD	$ 3799
S900/225 32/2000-8xCD	$ 3499
S900/200 32/2000-8xCD	$ 3099
S900/200DP 32/2000-8xCD	$ 3889
S900/180DP 32/2000-8xCD	$ 3499

POWERBOOKS

1400 CS
12 / 750-CD $ 1799
3400 / 180 / 200 / 240 CALL
5300 C / CS CALL

MONITORS

APPLE 15" / 15AV	$ 395 / 437
1710 / 1710AV	$ 777 / 888
APPLE 20"	$ 1575
SONY 100SX / SF	$ 383 / 444
SONY 200SX / SF	$ 699 / 777
SONY 300SF	$1625
VIEWSONIC 17GA / PT770	$ 649 / 729
VIEWSONIC GT770 / 17GS	$ 677 / 599
VIEWSONIC GT 800 / P 815	$1188 / 1777
Raster Ops pro 15 / 17	$ 333 / 577
Raster Ops MC 20 / 801HR	$ 1333 / 1959
RADIUS PRECISION VIEW 21	$ 1678
RADIUS PRESSVIEW 21 SR	$ 3099

SOFTWARE

AFTER EFFECT / PRODUCTION	$525 / 1595
FORM Z / WITH RENDER ZONE	$1350 / 1950
ELECTRIC IMAGE BROADCAST	$ 2395
FINAL EFFECT / BORIS EFFECT	$495 /435
ADOBE PREMIER / ILLUSTRATOR	$ 329 / 249

SCANNERS

STUDIO STAR LE	$ 757
STUDIO STAR FULL	$ 947
AGFA ARCUS II	$ 1535
LINOTYPE HELL JADE	$ 777
SAPHIRE / ULTRA	$ 1888 / 3599
PWRLOOK 2000ADVANCE	$ 2888
UMAX ASTRA 600 S	$ 299
UMAX S 12 PHOTO DLX	$ 475
EPSON 636 EXECUTIVE	CALL
EPSON 636 ARTIST / PRO	CALL
POLAROID 35..LE	$ 719
POLAROID 35..ES	$ 1469
POLAROID 35..PLUS	$ 1948

DIGITAL CAMERAS

KODAK DC 25 / 50	$ 444 / 619
POLAROID PDC / 40	$ 2799
Pixera Personal/PRO	$ 555 / 1175
OLYMPUS 200L / 300L	$ 599 / 899

DRIVES

FUJITSU 640 MO	$ 499
PINNACLE VERTEX 2.6	$ 1299
PINNACLE APEX 4.6	$ 1477
YAMAHA 4X6 CDR / TOAST	$ 888
ZIP / JAZ DR	$ 189 / 457
10 PK ZIP / 5 PK JAZ	$129 / 435

FAX.818.719.9115
6430 VARIEL # 105 WLH CA 91367
LOCAL & INT'L 818- 719- 9200

PRINTERS

STYLEWRITER 1200 / 2500	$189 / 299
LASER 12/640	$ 1399
LASER SELECT 360	$ 1039
HP 6MP / 5M	$ 879 / 1699
HP 4 M V 11 X 17	$ 2575
GCC LITE 600/ETHERNET	$1099
ELITE 608 / 808	$2095 / 2795
ELITE 1208 / SUPERSIZE	$3795 / 5250
EPSON STYLUS 600 / 800	$319 / 449
EPSON PRO XL / POSTSCRIPT	$1679 /259
NEWGEN IMAGER +	$ 4444
NEWGEN IMAGER 18 XF	$ 5299
NEWGEN DXP FULL BLEED	$ 4599
NEWGEN CHROMAX PRO	$ 12888
TEKTRONIX 140 / 240 / 350	CALL

DIGITAL VIDEO

MEDIA 100 / TARGA QX / QXC	$ 1995 / 3999
LE / LX	$ 4555 / 8388
1000 / 1000 PRO	$1595 / 1995
2000 / 2000 PRO	$ 2888 / 3333
2000 DTX / RTX	CALL

POWER MAC 5200 / 75
8 / 800 - CD KYBD
15" MONITOR
BUILT IN
$ 999

CIRCLE 495 ON READER SERVICE CARD

MOTOROLA
UMAX®
Authorized Reseller

MAC TO GO™

your #1 Apple® Super Source™

Power Macintosh® 4400	Power Macintosh® 7300	Power Macintosh® 6500/225	Power Macintosh® 6500	Power Macintosh® 8600/200
200MHz 16/2G/CD/KB $1489	160MHz 16/2G/CD/KB $2069	32/3GB/12XCD $1869.00	250MHz 32/4G/CD/ZIP $2139	32/2GB/12XCD/ZIP/KB $2989.00
300 PC 32/2G/CD/KB $Call	200MHz 32/2G/CD/KB $2439		250MHz 48/4G/CD OFC/33.6/ZIP $2399	
Power Macintosh® 9600	Power Macintosh® 9600/233	Apple® 15"	SONY 200sf	Performa® 6116 CD
300MHz 32/4G/CD/KB $3439	32/4GB/12XCD/KB $Call	15" Mntr, Refurb. $299.00*	17" Monitor, .25 DP,New $729.00	8/700MB/CD/KB $599.00*
200MP 32/4G/CD/KB $4349				
UMAX® C600	UMAX® J700	UMAX® S900	UMAX® S900	Performa® 6400/180
180MHz 16/2G/CD/KB $1379	150MHz 16/2G/CD/KB $1989	200MHz 32/2G/CD/KB $2959	233MHz 32/2G/CD/KB $3739	16/1.6GB/8XCD $1229.00
240MHz 16/2G/CD/KB $1799	180MHz 16/2G/CD/KB $2249	225MHz 32/2G/CD/KB $3299	250MHz 32/2G/CD/KB $4369	
MOTOROLA 3000 DT	MOTOROLA 3000 MT	MOTOROLA 4000 DT	MOTOROLA 4000 MT	Performa® 6400
160MHz 16/1.2/CD/KB $1229	200MHz 32/2G/CD/KB $1615	160MHz 16/1.2/CD/KB $1439	160MHz 32/2G/CD/KB $1625	200MHz 16/2.4G/CD $1439
200MHz 16/1.2/CD/KB $1459	240MHz 32/2G/CD/KB $2039	200MHz 16/1.2/CD/KB $2059	200MHz 32/2G/CD/KB $2279	200 Vid Video Edition $1889

PERFORMA®

Sale!

5200CD	8/800/KB/15"	999*
6220CD	8/1GB/TV/KB	749*
6116CD	8/700/CD/KB	599*
6200CD	8/1GB/CD	699*
5320/120	16/1GB/CD/15	1249
6360/160	16/1.2G/8XCD	1084
6400/180	16/1.6/8XCD	1229
6400/200	16/2.4/8XCD	1439
6400/200	Video Edit.	1889

POWERBOOK®

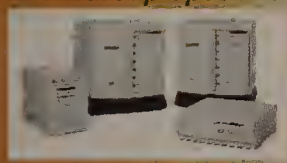
1400CS	12/750/Passive	1629
1400CS	16/750/CD/Pass	1899
1400C/133	16/1G/CD	2969
3400C/180	16/1.1G/CD	4199
3400C/200	16/2GB/CD	4699
3400C/240	16/3GB/CD	5799
5300Ce/117	16/1.1GB	2499
5300C	8/500	1895
2300C	8/750	1189*
2300C	20/1.1/ MDM	1399*

Apple® Monitors

MS 14"/15"	255*/299*
MS 15"/15AV	379/426
MS 1705/1710	609/749
MS 1710AV	849
MS 20"	1649

WorkGroup®

WorkGroup Specialist!



6150/66	16/1.2/INTRNT	1499
9150/120	16/2GB/CD	1399
7250/120	16/2GB/CD	1699
7250/120	16/2GB/INRNT	2099
7250/120	16/2GB/CD/AS	2459
8550/200	32/2GB/INTRNT	3799
8550/200	32/2GB/8XCD/AS	4169
8550/200	32/2GB/8CD/DAT	4269
8550/200	32/2GB/AS/DAT	4999
500/132	32/CD/BASE	6399
500/132	32/2GB/DAT/CD	7939
700/150	32/1GB/CD	7575
700/150	48/4GB/DAT/CD	9399
700/200	48/2-4GB/CD	10789

Apple® Printers

StylWrtr 2200 Portable	299
StylWrtr 1500	199†
StylWrtr 2500	255†
†After Manufactures Rebate	
LsrWrtr 12/640 PS	1389
LsrWrtr 16/600 W/Tnr	2088
LsrWrtr 12/660Ps Kit	5489

Power Macintosh

7200/120	16/1.2/CD	1189
7600/132	16/1.2/CD	1799
8500/150	16/1.2/CD	2099
8500/180	32/2G/CD	2799
9500/200	32/2G/CD	3099
9500/200MP	32/2G/CD	2899

SONY

LOWEST PRICES!

100SX/100SF	15"	379/449
200SX/200SF	17"	639/729
17SE2		939
300SFT	20" New!	1589
20SE2	1600X1280 .25	1839
GDM-2000CT		3099
GDM-W900T	24"	4199

NEC

M500/M700	379/737
XV15+/XV17+	369/689
P750/XE21	869/1569
E1100/P1150	1599/1939

UMAX®

Vista S6e/Pro	279/529
Vista S12 Deluxe	429
Vista S12LE/Pro	489/619
PowerLook II Pro	1299
PowerLook 2000	Call
Mirage D-16L Large Fmt	Call

HEWLETT PACKARD

DeskWrtr 680C	289
DeskJet 340 Prtbl Mac	318
DeskJet 870CXi	469
DeskJet 1600CM	1699
LaserJet 6MP New!	848
Color LaserJet 5M	4799
LaserJet 4MV	2289
LaserJet 5M	1689
LaserJet 5SI MX	3729
ScanJet 4C Mac	809
DesignJet 755CM Plotter	Call

EPSON®

ES-1000C	525
Expression 636 Exec	739
Expression 636 Artist	929
Expression 636 Proff.	1299
Stylus Color 600	289
Stylus Color 800	434
Stylus Color ProXL	1389

AGFA

Arcus II	1499
SnapScan	289
StudioScan IIsi	579
StudioStar LE	709
StudioStar Full Photoshop	879

ViewSonic

15GA	15"	439
17GS	17"	609
17GA	17"	659
GT770	17"	689
P810	20"	1589
PT770	17"	789
P810	20"	1589
P815	20"	1909

TARGA®

Bravado 1000	609
Targa 2000	2955
Targa 2000 Pro	3269
Targa 2000 Rtx	7999
Targa 2000 Pro w/ 8GB HDD Array	6399

WACOM

ArtPad II	129
Artz II 6x8	298
Artz II 12x12	415
Artz II 12x18	685

MICROTEK

ScnMkr E3	299
ScnMkr E6	547
ScnMkr E6 Pro	829
ScnMkr	1299

IMS Video

TT 2MB PCI	197
TT 4MB PCI	326
TT 8MB PCI	550

Polaroid®

SprntScn 35es	1479
SprntScn 35+	1849

RasterOps

SprScn MC600	589
SprScn MC20	1289
SprScn MC801	1589
SS MC801HP	1739

radius

PrssView 17sr	1789
PrecsnView 21	2289
PrssView 21sr	2999
TClr 30/1920	1189
VideoVison Pci	3099

FWB®

SldgHmr 8200	3239
SldgHmr17400	5209
Hmr DLT 15GB	3277
SledgeHammer PCI UW	

Nikon

Electronic Imaging

CoolScan	1145
Super CoolScn	1589

GLOBAL VILLAGE

Pltnm 33.6	129
Pltnm w/voice	239
Pltnm PC	199
Pltnm Pro	319

IOMEGA

ZIP 100	139
JAZ 1GB	419
100/1GB	14/79

Pinnacle Micro

Tahoe 640MB	669
Vertex 2.6GB	1335
Apex 4.6Gb	1499

Call Toll Free! 1-800-946-6221

E-Mail: mactogo@knl.com Customer Service: 310.444.1122 Facsimile : 310.444.1130

Gov't,Schools,Fortune 500 P.O.'s Welcome. "*" denotes Refurb prod. Visa,MC,AMAX accepted.Prices are Cash Discounted for COD Cash/Cashier Check.Prices may change without notice. Limited stock. All Sales are Final.

CIRCLE 477 ON READER SERVICE CARD

COMPU AMERICA
"The Computer Specialist"

1800-533-9005

HTTP://WWW.COMPU-AMERICA.COM

(310) 446-1771
FAX Bids
(310) 475-7744

10435 Santa Monica Blvd
LA, CA 90025

EMAIL: CompAmer@artnet.net

Come and see our HUGE showroom! We ship WORLDWIDE!
We accept Government, Fortune 1000, and University P.O.'s.

PowerComputing

WE CARRY THE WHOLE LINE OF POWERCOMPUTING UNITS! PTP 250MP, PTP 250, PCP 210!

PowerComputing

PowerTower Pro 225e
225MHz 604e Full Tower
16/2G/8XCD/8MB IMS
1MB CACHE, KEYBOARD
$2599 Refurbished One Year On-Site

PowerTower Pro 180e
180MHz 604e Full Tower
16/2G/8XCD/8MB IMS
1MB CACHE, KEYBOARD
$2199 Refurbished One Year On-Site

PowerBase 603e/180
180MHz 603e CPU
16/1G/8XCD/2MB VRAM
256k CACHE, DEMO UNIT
MINITOWER $1199
LOW PROFILE $1099

PowerCenter 604/150
150MHz 604 Low Profile
16/1G/8XCD/2MB VRAM
512K CACHE, KEYBOARD
$1399 Refurbished One Year On-Site

6500/250 Business Solution

- 250 MHz PowerPC 603e RISC
- 256K Level 2 cache
- 2 PCI expansion slots (7-inch)
- Built-In 12x CD-ROM
- Internal 100MB Zip Drive
- Microsoft Office included!!!
- Tons of Preinstalled Software
- Subwoofer speaker

48/4G/12XCD/ZIP $2279

6500/250

- 250 MHz PowerPC 603e
- Built In ZIP Drive
- 256K Level 2 cache
- Built-In 12x CD-ROM

32/4G/12XCD/ZIP ON SALE! $2099

6500/225

- 225 MHz PowerPC 603e
- 256K Level 2 cache
- 2 PCI expansion slots (7-inch)
- Built-In 12x CD-ROM

32/3G/12XCD ON SALE! $1799

NEW POWERMACS!

9600/200MP	34/4GIG/12X	4195
9600/200	32/4GIG/12XCD	3195
8600/200	32/2GIG/CD/ZIP	2995
7300/200	32/2GIG/12XCD	2199
7300/180	16/2GIG/12XCD	1995
4400/200	16/1.2/8XCD	1395

POWERMAC

7200/75	8/500/4XC	799*
7200/90	8/500/4XCD	849*
7200/120	16/1.2G/8XCD	999*
7200/120	16/1.2G/DOS	1699*
7500/100	16/1G	1099*
7600/120	16/1G/4XCD	1299*
7600/132	16/1G/CD	1499*
8500/120	16/1G/4XCD	1599*
8500/120	16/2G/4XCD	1699*
8500/132	16/1.2G/4XCD	1799*
8500/150	16/1.2G/8XCD	1995*
8500/150	16/2G/8XCD	2199*
8500/180	32/2G/8XCD	2499*
9500/120	16/1G/8XCD	CALL
9500/132	16/2G/8XCD/V	CALL
9500/132	16/2G/8XCD	CALL
9500/150	0/0/CD	CALL
9500/150	16/2G/4XCD/VID	CALL
9500/200	16/2G/8XCD	CALL
9500/180	MP 32/2G/8XCD	2799
8100/100	8/700	1199*
8100/110	16/2G/4XCD	1499*

WorkGroup Servers

7250/120	16/2G/CD	1095
7250/120	16/2G/INT	1695
7250/120	16/2G/CD/SHA	2199
8550/132	24/2G	2495
8550/132	24/2G/SHARE	3495
8550/200	32/2G/CD/INT	3995
8550/200	32/2G/CD/SHR	3295
8550/200	32/2G/CD/DAT	3995
500/132	32/CD/BASE	5995
500/132	32/2G/DAT/CD	7899
700/150	32/1G/CD	7499
700/150	48/4G/DAT/CD	9395
700/200	48/2G/CD	9995
9150/120	16/1GIG	1895

MICROTEK

ScanMaker E3	299
ScanMaker E6	547

POWERBOOKS

3400C/240	16/3G/12XCD	5395
3400C/200	16/2G/6XCD	4395
3400C/180	16/1.2G/6XCD	3895
3400C/180	16/1.3G	3495
1400C/133	16/1G/CD	2999
1400C/117	16/1G/CD	2899
1400CS/117	16/750/CD	1799
1400CS/117	12/750	1599
5300CE/117	32/1G	2299*
5300C/100	8/500	1695/1595*
5300CS/100	16/750	1495*
5300CS/100	8/500	1395*
5300/100	8/500	1099*
190CS/66	8/500	CALL
190/66	8/500	899
DUO 2300C	20/1.2GB/14.4	1399*
DUO 2300C	8/750/14.4	1099*
150	8/250	749

Apple Printers

SW 1200/2400	129*/169*
SW 2200	349
SW 1500	199/149*
SW 2500	279/199*
Apple LW Select 360	999*
Apple LW 4/600PS	749/649*
Apple LW 12/640/PS	1349
Apple LW 12/660PSC	5399
Apple LW 16/600PS	2099

VIEWSONIC

VIEWSONIC 15GA/15ES	439/379
VIEWSONIC 17GA/17EA	679/529
VIEWSONIC 17GS	639
VIEWSONIC GT770	689
VIEWSONIC PT770	789
VIEWSONIC GT800	1299
VIEWSONIC PT810	1699
VIEWSONIC P810	1549
VIEWSONIC P815	1699

AGFA

SNAP SCAN 3D	299
STUDIO SCAN II SI	639
STUDIOSTAR	829
ARCUS II	1795

PERFORMAS

6400/200V	16/2.4G/CD	1599*
6400/200	16/2.4GIG/CD	1149*
6400/180	16/1GIG/CD	999
6320/120	16/1GIG/CD	949/849*
6300/100	16/1.2G/4XCD	799*
6360/160	16/1.2G/8XCD	949*
6290/100	8/1.2GB/4XCD	749*
6220/75	16/1G/CD/TV	699*
6200/75	8/1GIG/4XCD	649*
6116/66	8/700/4XCD	649*
5320/120	16/1.2/CD/15"	1199
5260/100	16/800/CD	1099
5200/75	8/800/CD	1099*/949*
5400/180	16/1GIG/CD	1299
631/66	8/500/CD	599*

APPLE Monitors

Apple Ms 14"	249*
Apple MS 15"	349/299*
Apple MS 15AV	399
Apple 1705 17"	599/499*
Apple 1710 17"	729/699*
Apple 1710AV	829/799*
Apple Multiscan 20"	1499/1199*

SONY Monitors

Sony 100SF/100SX	449/379
Sony 200SF/200SX	759/649
Sony 300SF	1549

NEC Monitors

NEC 15XV+	449
NEC 17XV+	679/599*
NEC C500 15"	429
NEC C400 14"	329
NEC M500 15"	389
NEC M700 17"	729
NEC M750 17"	899
NEC E1100	1579
NEC P1150	1949

MODEMS

Global Village Plat 33.6 Voice	129*
Global Village Gold II 14.4	69
Global Village 28.8 PCMCIA	289
Global Village 28.8/ETHER	395
Global Village 19.2 500 Series	99
US Robotics X2 56.6	199

HewlettPackard

5M color	6999
5SIMX	3799
5M	1779
6MP	879
4MV	2199
DeskWriter 680C	299
Deskjet 870CXI	499

EPSON

STYLUS COLOR 600	299
STYLUS COLOR 800	429
STYLUS COLOR PRO XL	1649
EXPRESSION/636/EXEC	829
EXPRESSION/636/ART	1259
EXPRESSION/636/PRO	1729

RADIUS

PRESSVIEW 21SR 21"	2999
SUPERMATH 21TXL	1199*
PRECISION VIEW 21"	1599
15" COLOR PIVOT	399*
Thunder 30/1600	659
Tunder color 30/1600	1799
Thunder Power 30/1600	829
Thunder Power 30/1920	1099
Thunder 3D 1600 x1200	2699
VIDEO VISION STUDIO 2.0	3399

IMS

TWIN TURBO 8 MEG PCI	549
TWIN TURBO 4 MEG PCI	329
TWIN TURBO 2 MEG PCI	199

ATI

XCLAIM ULTRA VR 4 MEG	329
XCLAIM ULTRA VR 2 MEG	229
XCLAIM TV TUNER	89
XCLAIM 3D 8 MEG ACCEL	339

IOMEGA

ZIP DRIVE 100 MEG	149
JAZZ DRIVE 1 GIG	449
ZIP CART 10 PACK	129
JAZZ CART	89

RASTEROPS

SUPERSCAN MC-611	769
SUPERSCAN MC-17S	639
SUPERSCAN MC-801	1729
SUPERSCAN 801-HR	1979

PINNACLE MICRO

APEX 4.6 GB OPTICAL	1679
VERTEX 2.6 GB OPTICAL	1479
RCD 4X4 EXT RECORDER	879
TAHOE 640 MB DRIVE	679

WACOM

ARTZ II 6 X 8 W/PAINTER	579
ARTZ II 6 X 8	295
ARTZ II 12 X 12	429
ARTZ II 12 X 18	679

DIGITAL CAMERAS

RICOH RDC-2 W/MONITOR	979
KODAK DC 25	479
KODAK DC 20	189
KODAK DC 50 ZOOM	679
CASIO QV-300 W/MONITOR	679

TRUEVISION

TARGA 1000 PCI	1679
TARGA 1000 PCI PRO	1995
TARGA 2000 PCI	2899
TARGA 2000 PCI PRO	3399

NEWER TECH

PB 1400 200MHZ UPRADE	599
PB 500 167MHZ 0MB	529*
PB 500 167MHZ 8MB	629*
POWER MAC 200MHZ	899
POWER MAC 225MHZ	1129

UMAX COMPUTERS

C500/160	16/1.2/8XCD	1079
C600/180	16/1.2/8XCD	1299
C600/200	16/2G/8XCD	1479
C600/240	24/2G/MOD	1699
J700/150	16/2G/8XCD	1899
J700/180	24/2G/8XCD	2099
S900/180	32/2G/8XCD	2695
S900/200	32/2G/8XCD	2799
S900/225	32/2G/8XCD	3029
S900/240	32/2G/8XCD	4199

UMAX SCANNERS

VISTA S6E Photo Shop LE	299
VISTA S6 FULL PHOTO	479
VISTA S12 PHOTOSHOP LE	589
VISTA S12 MAC PRO II	669

All prices are subject to change without notice. All prices are cash dicounted. An Asterisk "*" reflect refurbihed.

CIRCLE 467 ON READER SERVICE CARD

PERFORMA 6400
200MHz/16/2G/CD/KB/Mod*
$1199

POWER MAC 7300
180MHz/16/2G/12xCD/604e/L2
$1769

iCN
INNOVATIVE COMPUTER & NETWORKING INC.

POWER MAC 9600
200MHz/32/4G/12xCD/604e/L2/KB
$3179

PB DUO 2300C
100MHz/20/1G/Mod*
$1399

POWERMACS

► 9600
200Mhz MP 604e/32/4GB/12xCD/L2Cache $4299
200Mhz 604e/32/4GB/12xCD/L2Cache ... $3199

9500
200Mhz 32/2GB/CD* .. $2799
180Mhz MP 32/2GB/CD $2749
150Mhz 32/2GB/CD ... $2089
132Mhz 16/2G/CD* ... $1799
120Mhz 16/1G/CD* ... $1699

► 8600
200Mhz 604e/32/2GB/12XCD/ZIP/L2 ..... $2999

8500
180Mhz 32/2GB/CD* $2549
150Mhz 16/1G/CD* $1999
120/132Mhz 16/1G/CD* $1649/1749

7600
132Mhz 16/1.2G/CD* $1599
120Mhz 16/1.2GB/CD* $1399

► 7300
200Mhz 604e 32/2GB/12xCD/L2 .... $2079
180Mhz 604e 16/2GB/12xCD/L2 Cache $1769

► 7200
120Mhz 16/1.2GB/CD/L2 Cache* $1175

► 6500
300Mhz 32/4GB/12XCD/L2/Video/TV $CALL
250Mhz 48/4GB/12XCD/L2/Zip/MS .. $2390
250Mhz 32/4GB/12XCD/L2/ZIP $2175
225Mhz 32/3GB/12XCD/L2 ..... $1899

► 4400
200Mhz 16/2GB/CD/L2 Cache $1399

UPGRADES
WITH ORIGINAL APPLE LOGIC BOARD & PARTS

950 ,900 to Workgroup Server 9150/120 .$1195
8100s to 8500/120/132/150 $1150-1250-1450
Quadra 840AV, 800 to 8500/120/132/150 .....$1250-1350-1550
(8500 & 9500) to 150/180/200 MHz 604 Processor .$499-699-899
7200/75-90MHz to 7200/120 ....$550-450
7200 to 7600/120/132 .....$1190-1390
7500 to 7600/120/132.....$395-595
7100 to 7200/120 .....$695
630 to 6200/75 - 6300/100 .....$495-795
Duo 2300 From Duo 200 to Duo 2300 (PPC 603e,100MHz) $895
Powerbook 500 Series Processor Card to PowerPC 100Mhz Processor.....$479
8100/80, 8150/80 to 8100/100-110 $790-890
Centris, Quadra 610, 660 to 6100 & Q650 to 7100 .....CALL

TOSHIBA, MOTOROLA AND UMAX AUTHORIZED DEALER

APPLE PROCESSOR UPGRADE
7600/8500/9500 TO
132MHz/150MHz/180MHz/200MHz
$295/$395/$649/$899

APPLE PRINTER
PORTABLE 2200
$269

POWER BOOK 1400CS
117Mhz/16/750/CD
$1849

MOTOROLA
STAR MAX ADT 3000/180 16/1GB/8XCD/256K/Fax,Modem/KB $1299
STAR MAX ADT 3000/200 16/1GB/8XCD/256K/Fax,Modem/KB $1579

UMAX
SUPER MAC S900/250 32/2GB/8XCD/KB/ZIP $4499
SUPER MAC S900/233 32/2GB/8XCD/KB $3899
SUPER MAC S900/225 32/2GB/8XCD/KB $3429
CALL FOR PRICES ON OTHER MODELS

PRE-OWNED POWERBOOKS
145 8/80/Modem $429
160 4/160 Modem $549
165 4/160 Modem $589

POWERBOOKS
1400c/113Mhz/16/1GB/CD ...$2899
1400cs/117Mhz/12/750 ...$1599
1400cs/117Mhz/16/750/CD $1849
3400c/180Mhz16/1.3GB $3299
3400c/180Mhz16/1.3GB/CD ..$3799
3400c/200Mhz16/2GB/CD ...$4299
3400c/240Mhz16/3GB/CD ...$5399
DUO 2300c 100Mhz/20/1G/M* $1399
Power Book 500 Series In Stock

SCANNERS
AGFA Arcus II Transp/Full Photoshop $1549
UMAX Vista S6E Full Photoshop $599
UMAX Vista S12 Full Photoshop $699
UMAX Powerlook II Transp/Full Photo. $1299
VISIONEER PaperPort-VX $279
CALL FOR PRICES ON OTHER MODELS

FOR CURRENT PRICES VISIT OUR WEB SITE AT:
http://www.icni.com
E-mail: icn@icni.com

Prices Subject to Change Without Notice
All Prices reflect 3% Cash Discount • *: Refurbished

1.800.660.9876
Fax:(310) 445-6611 Tel:(310) 445-6600
FAX TOLL FREE FROM JAPAN: 00-31-114211
2045-B S. Barrington Ave. LA, CA 90025

APPLE PARTS
Original Apple 8x-CD-ROM $199
Original Apple 4xCD FOR POWERMAC $99
9500/8500 LOGIC BOARD. $895-799
1.44 Floppy Drive. $125

PERFORMAS
5260 100MHz/16/800MB/CD/Built-in Mon/KB $1099
5400 180MHz/16/1.6GB/CD/Built-in Mon/KB. .$1299
6360 160MHz/1.2GB/8xCD/28.8 Mod./KB. $1099
6400 180MHz/16/1.6GB/8xCD/L2C/28.8Mod/KB .$1279
6400 200MHz/16/2.4GB/8x-CD/L2C/28.8 Mod/KB* .$1199
CALL FOR PRICES ON OTHER MODELS

MONITORS
APPLE 15" Multi.$379/$309*
APPLE 15" AV Multi $399
APPLE 1705 Multi $629/$529*
APPLE 1710 Vision.....$749
APPLE 1710AV $839
APPLE 20" Multi $1429
NEC XV15+/XV17+ $469-699
NEC M500/M700 .....$479-779
NEC XP17/XP21 .....$999-1929
RADIUS PressView 17SR/21SR $1899-3099
RASTEROPS MC20 20"Color New $1379
SONY 15" 100SX/ 15"100SF .$399-469
SONY17" 200SX/ 17"200SF ...$659-759
SONY20" 300SF/ 20"SE2 ...$1589-1799
VIEWSONIC 17GA/ PT770 .....$699-779
VIEWSONIC 20" P810/ P8115 .....$1549-1699
CALL FOR PRICES ON OTHER MODELS

PRINTERS
APPLE LaserWriter 12/640 .....$1379
APPLE SW 2200 .....$269
APPLE LW 4/600 .....$769
APPLE Color 12/660 .....$5479
APPLE SW 2500 ....$339/$279*
APPLE SW 1500 .....$239
GCC XL608 600dpi/8ppm/11.7x20 ....$2099
GCC XL808 800dpi/8ppm/11.7x20/Ethernet ...$2799
HP LASER JET 6MP $889
HP DESK JET 870 CXI $499
HP LASER JET 4MV Prints 11x17 .$2499
HP LASER JET 5M $1695
HP DESK JET 1600CM. $1799
EPSON STYLUS COLOR PRO XL Wide 720dpi ...$1679
EPSON STYLUS 800 COLOR.....$409
CALL FOR PRICES ON OTHER MODELS

QUADRAS
Q950 8/0* $799
Q840AV 0/0* $779
Q800 8/0* $690
Q650 8/0* $679

CIRCLE 439 ON READER SERVICE CARD

HTTP://WWW.SHREVESYSTEMS.COM

Apple Computer

NEW!

PowerMac 7200/75 Logic Board with Power Supply

PowerPC™ **$299!**

Macintosh LC580

ONLY **$899**

FREE! ClarisWorks 3.0

MACINTOSH LC580 FEATURES
- 33-MHz MC68LC040 processor
- 8MB of RAM, 500MB hard drive
- built-in trinitron display
- AppleDesign keyboard
- optional CD-ROM
- ask for FREE ClarisWorks at order time!

NEW!

PowerPC™ LOGIC BOARD UPGRADES

Quadra 950 to WGS 9150	$999
PowerMac 7200 to 7600/120	$699
Quadra 800 to PowerMac 8100/80	$599
Quadra 650 to PowerMac 7100/80	$499
Quadra 660 to PowerMac 6100/60	$499
Performa 630 to 6200/75	$399
Performa 6200 to Performa 6300	$299

604/120 $99
PowerPC
604/132 $125
604/150 $249

$35 rebate off 132 or 150 with trade-in of your old 604 card

90-DAY WARRANTY

604 PROCESSOR CARDS for PowerMac 7500, 7600, 8500, and 9500 series

Power Supplies

800/840/8100 series

Original Factory Item! NEW!

$199

90-DAY WARRANTY

Macintosh Quadra 950

- 33-MHz MC68040 processor
- full-size tower
- built-in Ethernet
- 16 SIMM sockets
- 5 Nubus slots
- One-Year Warranty

AS LOW AS **$999** 0/0 configuration

8/0 configuration **$1099**

8/500 configuration **$1199**

NEW!

PowerMac HPV Card

- 6100*/7100/8100 series
- 1MB VRAM upgradable to 2MB
- Original Apple Part
- Easily installs

90-DAY WARRANTY

$199

*6100 requires PDS Adapter which is $100 additional

SUPERDRIVES

Original Apple Parts

OLD STYLE OR AUTO EJECT!

#661-0474 #661-0121

NEW!

$129

90-DAY WARRANTY

Mac PowerBook 5300c

- 100-MHz PowerPC™ 603e
- 8MB RAM
- 500MB hard drive
- 16-bit active-matrix color display
- external video support
- VRAM upgradable

$1899

1-YEAR WARRANTY

NEW!

E-MACHINES DOUBLECOLOR SX

- Accelerated 8-bit video
- Hardware Pan & Zoom
- Virtual Screens

INCLUDES SOFTWARE

90-DAY WARRANTY

Up to 832X624 **$129**

FOR NUBUS-BASED MACS

NEW!

Macintosh Performa 5200/75LC

- 75-MHz PowerPC 603
- 8MB of RAM
- 800MB hard drive
- 4X internal CD-ROM
- one PDS slot
- built-in LocalTalk
- built-in trinitron display
- AppleDesign keyboard
- internal 14.4 faxmodem

PowerPC™

REFURBISHED AS LOW AS **$949**

New units available for $1099

Macintosh Performa 6300/100

- 100-MHz PowerPC 603e
- 16MB of RAM
- 1.2GB hard drive
- 4X internal CD-ROM
- one PDS slot
- built-in LocalTalk
- 15" Apple Multiscan
- AppleDesign keyboard
- internal 14.4 faxmodem

PowerPC™

FACTORY RECONDITIONED **$1199**

Macintosh Performa 6200/75

- 75-MHz PowerPC 603
- 8MB of RAM
- 1GB hard drive
- 4X internal CD-ROM
- one PDS slot
- built-in LocalTalk
- 15" Apple Multiscan
- AppleDesign keyboard
- internal 14.4 faxmodem

PowerPC™

FACTORY RECONDITIONED **$1099**

Power Macintosh 7500/100

Upgradable to faster PowerPC

- 100-MHz PowerPC 601+
- 16MB of RAM
- 500MB hard drive
- 4X internal CD-ROM
- built-in AV ports
- 2MB of VRAM
- built-in Ethernet
- optional Level 2 cache
- processor upgradable

PowerPC™

NEW **$1449**

Macintosh CPUs

*Performa 635 4/250/CD	$599.
**Performa 6200 8/1GB/CD	$799.
Performa 6400/180 16/1.6GB/8XCD NEW	$1399.
*Centris 650 4/0	$549.
*Quadra 660av 4/0	$599.
*Quadra 840av 0/0	$849.
*Quadra 800 8/0	$849.
Quadra 950 8/0 NEW	$1099.
**PowerMac 7600/120 16/1GB/CD	$1449
**PowerMac 9500/132 16/2GB/CD	$2399.
*WGS 8150/80 8/500	$1499.
*WGS 8150/110 16/1GB/CD/DAT/AShare	$2599.
*WGS 9150/80 16/1GB/CD	$1699.
*WGS 95 8/500	$999.
*Network Server 700 32/4GB/CD/DAT	$5999.

Printers

*Color StyleWriter 2200	$219.
*Apple Personal LaserWriter LS	$299.
*Apple LaserWriter 16/600	$1399.
**Apple LaserWriter Select 300	$379.
*Apple Personal LaserWriter NTR	$599.
Apple 11x17 Color Inkjet NEW	$499.

Laser toner cartridges sold separately

NuBus Adapters/DOS Cards

Quadra 660AV NuBus Adapter NEW	$49.
Quadra 610 Nubus Adapter NEW	$49.
*Quadra 610 DOS Compatibility Card	$249.

* refurbished
**factory refurbished

Video Cards

RasterOps 24MX NEW	$249.
*SuperMac PDQ 8•24	$349.
**7100/8100 series AV Card	$249.
**6100 series AV Card with adapter	$349.
**Apple QuickDraw 3D Accelerator Card PCI	$299.

PowerBooks

PowerBook 145 4/80	$549.
*PowerBook 160 4/80	$649.
*PowerBook 150 4/120	$649.
*PowerBook 170 4/80	$649.
*PowerBook 165 4/80	$699.
*PowerBook 165c 4/80	$899.
PowerBook 520 4/240 NEW	$1099.
PowerBook 520C 4/160 NEW	$1399.

Monitors

Apple 14" A/V NEW	$349.
*Apple MultiScan 17"	$649.
**Apple 15" MultiScan	$329.
**Radius IntelliColor Display/20e NICE!	$1299.
**Hewlett-Packard 17" trinitron	$449.
**Hewlett-Packard 20" trinitron	$649.
Samsung 20" grayscale TPD with card NEW	$549.
Samsung 20" grayscale TPD for SE/30 NEW	$449.

* refurbished
**factory refurbished

Logic Board Specials

7200/90	$499.
6100/60	$499.
7100/80	$649.
8100/110	$999.
PowerBook 520	$399.
Quadra 840AV	$499.
Quadra 950	$499.

Apple Printer Blowout

Personal NT to NTR Upgrade NEW	$79.
*LaserWriter 4/600 PS	$649.
*LaserWriter IIf	$699.
*LaserWriter IIg	$899.
StyleWriter 1200 NEW	$179.
*Portable StyleWriter	$149.

StyleWriter 1500 TRADE IN!

Trade in your good, working StyleWriter or StyleWriter ii and get a StyleWriter 1500 for just $149!

149!

*reconditioned

SHREVE SYSTEMS

WE STOCK MAC PARTS!

1200 Marshall Street
Shreveport, Louisiana 71101

HTTP://WWW.SHREVESYSTEMS.COM

PowerPC™ and the PowerPC logo are registered trademarks of IBM Corporation

School PO's Accepted

VISA MasterCard DISCOVER

1-800-227-3971

ORDER MON-FRI, 9AM-6PM CENTRAL

FAX (318) 424-9771 • Tech (318) 424-7987

Products are refurbished unless indicated as "new". Prices reflect a 2% cash discount and are subject to change without notice. Returns are subject to a 15% restocking fee. All trade-ins subject to approval of management.

CIRCLE 417 ON READER SERVICE CARD

1-800-334-KIWI

Kiwi Computers • Save on refurbished Macs

Performas

630 8/1 Gig 4xCD	$499
6200/75 8/1 Gig 4xCD 14.4	$599
5200/75 8/1 Gig 4xCD built-In 15"	$899
6300/100 16/1.2 Gig 4xCD 28.8	$749
6320/120 16/1.2 Gig 4xCD TV 28.8	$849
6400/180 16/1.6 Gig 8xCD 28.8	$1049
6360/160 and 6400/200	Call

Performa prices listed above are CPU only.

Power Macs

7100/80 8/700 2xCD	$849
7200/120 16/1.2 Gig 4xCD	$999
7200/120 16/1.2 Gig 8xCD	$1049
7200/120 16/1.2 Gig 8xCD DOS	Call
7600/120 and 132	Call
8500/120, 132, 150 & 180	Call
9500/120, 132, 150 & 200	Call
Power Computing Mac Clones	Call

Upgrades

Performa 630 series to 6200/75mhz	$349
Performa 630 series to 6300/100mhz	$399
Performa 630 series to 6320/120mhz	$475
Performa 6200 to 6320/120mhz	$399
Performa 6200, 6300, 6320 to 6400	Call
PowerMac 7200 to 7300	Call
7500, 7600, 8500, 9500 upgrade to 225mhz	Call
Powerbook 520c & 5300cs to 1400cs	Call

Monthly Specials

Apple Stylewriter 1200	$125
Apple 15" Multiscan Monitor	$299
Apple TV/Video card for P630, 6200, 6300	$99
Apple 8x internal CD-Rom	$165
Apple Plaintalk Microphone	$15
GV Platinum internal 28.8 Modem for P5200/6200	$49
GV Mercury 19.2 modem for PB520/540	$99

Visa/Mastercard/American Express No Surcharge.

Refurbished products have a 90 day warranty • Returns subject to a 15% restocking fee • Prices subject to change without notice.

Call Toll Free:1-800-334-5494
International: 310-553-4507 Fax: 310-286-9667
Hours: Mon-Fri 8am to 6pm, Sat 9am to 2pm • Better Business Bureau Member
Kiwi Computer, P.O. Box 67381, Los Angeles, CA 90067

CIRCLE 404 ON READER SERVICE CARD

2xcd/ZIP/KB CALL - 9600/200MHz 32/4gb/12xcd/KB $3,399 - 6500/225MHz 32/3gb/12xcd/33.6KB CALL - 6500/250MHz 32/4gb /12xcd/33.6KB CALL - POWERBOOKS 3400c/180MHz 16/1.3gb/6xcd 7300/180MHz 16/2gb/12xcd/KB $2,199 - 8500/200MHz 32/2gb/1 /ENET $3,599 - 3400c 200MHz 16/2GB/6xcd/ENET $4,999 POWERMACS 4400/200MHz 16/2gb/8x/ENET/KB $1,699 -

VISA

Computer Pros

Your Macintosh Source.

We have been with "MACWORLD" for over a year and could pay them for a full page ad but we'd rather pass on the savings to you.

We will beat any competitor's price!

1-800-319-4MAC (4622)

International Orders (305) 825 9574

Web site: http://www.synaptix-inc.com E-Mail mailman@synaptix-inc. com

DISCOVER

FAST CASH

For *ALL* Macs, Memory & Peripherals — Working or not

TOP DOLLAR PAID

Mac Traders (800)990-0995

(310) 576-2466 Mon.-Fri. 9 AM-6 PM Sat.10 AM-4 PM (P.S.T.) Fax: (310) 394-7323
1511 Lincoln Blvd. (bet. Broadway & Colorado), Santa Monica CA. 90401

Mac S·A·L·E INTERNATIONAL

*USED/*REFURBISHED*

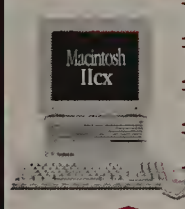
Desktop CPU's

Mac LC	4/40	$169.00
Mac IISI	5/80	$229.00
Centris 610	8/230/CD	$499.00
Quadra 610	8/230/CD	$529.00
Quadra 840AV	8/350	$749.00
6100/60	8/250/CD	$649.00
Perf. 600	5/80/CD	$399.00
*Perf. 5200/75	8/800/CD	$949.00
Perf. 6116	8/700/CD	$699.00
Perf. 6200	8/1G/CD	$699.00
*Perf. 6214	8/1G/CD	$699.00
*Perf. 6290	8/1.2G/CD	$799.00

Monitors

Apple 14" Color Display	$249.00
Apple 14" AV Display	$249.00
Apple 15" MultiScan	$299.00
Apple 17" MultiScan	$499.00
Apple 1710 AV Display	$599.00

USED COMPUTER SPECIALS



Mac II 4/0-$79
Mac IIcx 4/80-$159
Mac IIx 4/80-$159
Mac IIfx 4/80-$199
(Monitor,keyboard/mouse additional)

PowerBook 160 4/120
68030 25MHz, Gray Scale
Only $499.00

Quadra 610 8/230/CD
68040 25MHz
Complete System Special Includes:
Apple Color Monitor, Keyboard & Mouse
Only $749.00

*USED/*REFURBISHED*

PowerBooks

PB 140	4/40	$379.00
PB 145	4/40	$429.00
PB 165C	4/80	$899.00
PB 170	4/80	$499.00
PB 180	4/80	$699.00
Duo 210	4/80	$349.00
Duo 230	4/80	$399.00
Duo Dock		$249.00

Printers

New Personal LaserWriter NTR	$449.00
Laser Select 300	$299.00
Laser Select 310	$369.00
LaserWriter IINT	$399.00
LaserWriter Pro 630	$899.00
LaserWriter Pro 810	$1499.00

Accessories

Mac IISI NuBus Adapter	$39.00
Apple Ext. II Keyboard	$49.00

* USED *

ColorStyleWriter 2200 or 2400
Your Choice
$159.00

* NEW *

• Apple CD-600i •
4X Speed Tray Loading Int. CD-Rom Drive
ONLY - $99.00

• Personal LaserWriter NTR Logic Board •
With Trade-In, ONLY $79.00

Limited Quantities/Prices subject to change
Prices represent a Discount- off Full Price
Returns at discretion of Mgmt /15% Restocking fee

1-800-729-7031

1150 W. Alameda Dr, Suite 1 & 2
Tempe, AZ 85282
(602)858-0900 /www.macsaleint.com

WE WANT TO BUY YOUR NEW/USED MAC EQUIPMENT

CIRCLE 401 ON READER SERVICE CARD

Shipping World Wide

LA COMPUTER CENTER

CALL (800) 689-3933

UNIVERSITY, SCHOOLS, GOV'T & FORTUNE 1000 P.O.'S ACCEPTED!

Call for Quantity Pricing!

INTERNATIONAL ORDERS WELCOME CALL PH. (310) 479-0999

Customer Service (310) 473-2535 FAX (310) 312-9041

E-Mail us or place your orders on-line at: lacc@lacc.com

POWERMACS

9600/200
32/4GB/12xCD/keyboard
$3199
MONITOR SOLD SEPARATELY

7300/200 32/2GB/12xCD **$2199**
7300/180 16/2GB/12xCD keyboard **$1999**

8600/200
32/4GB/CD/kbrd
$2995
MONITOR SOLD SEPARATELY

4400/200	16/1.2/8xCD/kybrd	$1399
5260/100	16/800/4xCD	$1199
6100/66*	16/500/CD/DOS	$1049
7200/75*	6/500/4xCD	$899
7200/90*	8/500/4xCD	$949
7200/120	16/1.2GB/4xCD	$999*/1149
7200/120/P100*	16/1.2GB/8xCD	$1699
7500/100	16/1G/4xCD	$1199*/1299
7600/120*	16/1.2GB/CD	$1399
7600/132*	16/2/CD	$1599
8500/120*	16/2GB/4xCD	$1699
8500/132*	16/1.2GB/4xCD	$1799
8500/150*	16/2GB/8xCD	$2099
8500/180*	32/2GB/8xCD	$2499
9500/132	16/1GB/4xCD	$1699
9500/132	16/2GB/4xCD	$1999
9500/150	16/2GB/4xCD	$2099
9500/180MP	32/2GB/CD	$2795
9500/200	00/CD	$CALL
9600/200MP	32/4/12xCD	$4199

WorkGroup Servers

7250/120	16/1.2GB/CD/NETWK	$1399
7250/120	16/1.2GB/CD/AS	$2399
8550/132	24/2GB/CD/AS	$3499
8550/132	24/2GB/CD/INT	$2499
8550/200	32/2GB/CD/NETWK	$3699
8550/200	32/2GB/CD/APPLE SHARE	$4299

PERFORMAS

6400*
180MHz! $999
16/1.6GB/8xCD/28.8Kbps
No Cache, No Monitor
200MHz VIDEO EDITION $1599
200MHz! $1149
16/2.4GB/8xCD/28.8Kbps
256K L2Cache, No Monitor

6500's Are Here!
225MHz! POWER PC w/603ev Processor 32/3G/12xCD/36.6 Mdm **$1799**
250MHz! POWER PC w/603ev Processor 32/4G/12xCD/36.6 Mdm/ZIP drive **$2099**
250MHz! POWER PC w/603ev Processor 48/4G/12xCD/36.6 Mdm/ZIP drv. with Microsoft Office. **$2299**

5320/120	16/1.2G/8x/Monitor/keybrd.	$1199
5200/75*	8/800/CD/15'	$899
6116/66*	8/700/2XCD No Mon	$649
6200/75*	8/1GB/4XCD No Mon	$649
6220/75*	16/1GB/4XCD/NoMon	$729
6300/100*	16/1G/4XCD/NoMon	$799
6320/120*	16/1.2GB/4XCD/TV/No Mon	$849
6360/120*	16/1.2GB/8XCD/No Mon	$949
640*	12/500/2XCD/DOS	$699

ACCESSORIES

MODEMS

GlobalVillage Modems

Mercury19.2Kbps for PB500	$129
Teleport Gold II 14.4Kbps	$79
Teleport Platinum 33.6Kbps	$189
Powerport Gold 14.4Kbps PCMCIA	$99
Powerport Plat. 28.8Kbps PCMCIA	$229
Powport Plat. Pro 28.8+Enet	$329
Internal 14.4 for Performas	$49

ACCESSORIES

Iomega ZIP 100 w/1cartridge	$149
Iomega JAZ 1GB w/1cartridge	$449
ZIP 10pk Cart/Jaz Cart	$149/89
Apple 600e 4xCD-Rom External*	$129

SCANNERS

AgfaArcus II w/Trans w/Full Photo	$1729
AgfaStudioStar w/Full Photo	$999
AgfaStudioScan IIsi w/LE Photo	$649
AgfaSnapScan w/LE Photo	$299
Umax Vista S6E w/LE Photo	$299
Umax Vista S6 w/Full Photo	$549
Umax Vista S12 w/Deluxe	$599
Umax Vista S12 w/Full Photo	$729
Umax Gemini V-16	$1099
Umax Powerlook II w/Trans w/Photo	$1799
Umax PowerLook 2000	$4499

POWERBOOKS

Apple Power Book 3400C
Now In Stock!
240MHz! 16MB/2GB/6xCD **$5395**
200MHz! 16MB/2GB **$4395.00**
180MHz! 16MB/1.3GB/6xCD **$3895.00**
1400c 133MHz 16/1.1GB/6xCD **$2899**
180MHz! 16/1.3GB **$3495**

1400CS/117	16/750/6xCD	$1799
1400CS/117	16/750	$1599
5300CE	32/1GB	$2599/2499*
5300C	16/750	$2399/2299*
5300C	8/500	$1695/1599*
5300CS	16/750	$1999/1899*
5300CS	8/500	$1695/1595*
540C	4/320	$CALL
520C	12/240/MOD	$CALL
520	8/240	$CALL
190CS	8/500	$CALL
190	8/500	$CALL
150	8/250	$CALL
DUO2300C	8/750/MOD	$1099*/1299
DUO2300C*	20/1.1GB/MOD	$1399
DUO250	12/200/MOD	$799*
DUO280C	12/320/MOD	$999*
DUO280	12/240/MOD	$899*

MONITORS

15" MultiScan	$299*
15"AV MultiScan	$399
1705 17" MultiScan	$599
1710 17" MultiScan	$729
1710AV 17" MultiScan	$829
20" MultiScan	$1499/1199*
SONY 100SX/100SF	$329/449
SONY 200SF/200SX 17"	$759/649
SONY 300SF2-20"	$1549

PRINTERS

LaserWriter 300/320	$499/599
LaserWriter Select 360	999*
LaserWriter 4/600	$649*
LaserWriter 12/640/PS	$1399
LaserWriter 16/600/PS	$2049
COLOR LW 12/600/PS	$2999*
COLOR LW 12/660/PS	$3499
Stylewriter 2500	$279/199*
StyleWriter 2400	$169*
StyleWriter 1500	$249
StyleWriter 1200	$169/129*
Star Color Printer for Mac	$89
HP LaserJet 6MP	$849
HP LaserJet 5M	$1779
HP LaserJet 4MV	$2199
HP DeskJet 870Cxi	$479
HP DeskJet 680C	$279

PowerComputing

PowerTower Pro 225*
225MHz 604e RISC Processor 16/2G/8xCD/8MBVRAM
$2599

Power Center 150*
150MHz 604e RISC Processor 16/2G/8xCD
$1399

PowerTower Pro 180*
180MHz 604e RISC Processor 16/2G/8xCD
$2199

UMAX®

Computer Corporation
Ultimate Expandability

S900/604e 250MHz!	32MB/2 GB/8MBVRAM/8xCD/Keybrd	Tower	$4299
S900/DP/604e 233MHz!	32MB/2 GB/4MBVRAM	Tower	$3599
S900/604e 200MHz!	32MB/2 GB/8MBVRAM/Keybrd	Tower	$2899
J700/604e 180MHz!	24MB/2 GB/2 MB VIDEO ENET 33.6 MODM	Tower	$2199
J700/604e 150MHz!	24MB/2 GB	Desktop	$1699
C600/603e 180MHz!	16MB/1.2GB/8xCD	Desktop	$1299
C600/603e 200MHz!	16MB/2 GB/8xCD/28.8 FAX	Desktop	$1599
C600/603e 240MHz!	24MB/1.2 GB/28.8 MODM	Desktop	$1699

Radius

PressView 17SR	$1899
PressView 17SR	$3049
Precision View 21	$2229
Multi View 21	$1399
PrecisionColor 8/1600	$659
ThunderPower 1920	$1159
VideoVision 2.0 PCI	$3449

Epson

Stylus Color ProXL	$1639
Stylus Color Pro	$379
Stylus Color 500	$279
Expression 636 Prof	$1789

Supra FAX Modem

Fax/Modem 33.6 v.34	$189
SupraSonic 33.6	$229
SupraExpress 33.6	$125

Newer Technology

200MHz	$899
180MHz	$757
NUpowr 200MHz for PB1400	$599
NUpowr500 Series 167MHz 8MB	$669
16Bit Video Out Card	call
Linkcomm External 33.6 Modem	$159
CardCAM Video-In Card	$359

Syqest

Ezier 230MB Drive & Cartridge	$255
SyJET 1.3GB Drive & Cartridge	$499

Wacom

ArtPad II 4x5	$135
ArtZ II 6x8	$299
ArtZ II 12x12	$389

Microtek

ScanMaker III (36 Bit)	$1359

FWB Incorporated

JackHammer PCI Accelerator	$315
SedgeHammer 17400 PCI-W	$5389
Hammer DLT 15GB	$3698
CD Recordable	$1229

Hard Drives

1 GB SCSI Quantum	$249
2 GB SCSI Quantum	$349
3 GB SCSI Quantum	$399
4 GB SCSI Quantum	$799
9 GB SCSI Seagate	$1799

RasterOps/NSA Hitachi

SuperScan MC801 HR	$1799
SuperScan MC611 17' (.26)	$789
SuperScan MC20 20"	$1299
SuperScan MC801 21"	$1599

Integrated Micro Solutions

TwinTurbo 128M 4MB VRAM	$349
TwinTurbo 128M 8MB VRAM	$595

The Latest Software

Microsoft Word 6.01	$278
Microsoft Office 4.2.1.	$389
Adobe Photoshop 4.0	$450
Adobe PageMaker 6.5	$479
Adobe Illustrator 6.0	$343
Director MultiMedia Studio	$836

Nikon Electronic Imaging

SuperCoolScan External	$1849
LS-20 CoolScan II	$1159

Trade in your PowerBook

1400C 117 to 3400C,200MHz	$3199
5300 to 1400c/CD	$2499
5300cs to 1400cs/CD	$1649
5300cs to 1400c/CD	$2099
5300c to 1400cs/CD	$1699
5300c to 1400c/CD	$2149
5300ce to 1400c/CD	$1799
540c to 1400c/CD	$2099

Digital Video Cameras

KODAK DC20	$325
KODAK DC50	$888

GE 4 yEAR ON SITE WARRANTY!
ASK YOUR SALES REP REGARDING GE EXTENDED ON SITE WARRANTY

$100 to $500	$501 to $700	$701 to $1200	$1201 to $2000	$2001 to $3000	$4001 to $5000
$49.95	$79.95	$139.95	$169.95	$199.95	$259.95

FedEx NEXT DAY AND SAME DAY SHIPPING AVAILABLE, WE SHIP WORLDWIDE!
OPEN MON-SAT. VISIT OUR SHOWROOM!
12002 PICO BLVD. WEST LOS ANGELES, CA 90064

Visit Us At Our Web Site http://www.LACC.com
24Hrs A Day -- On-Line Catalog & Ordering
E-Mail us at: lacc@lacc.com

*Reflects Refurbished Units. Prices Subject To Change Without Notice. CALL FOR LATEST PRICE. ALL PRICES REFLECT A 3% CASH DISCOUNT. Credit Cards Will Be Verified For Fraudulent Use.

CIRCLE 497 ON READER SERVICE CARD

MICRO OUTLET

Free Utilities CD's With Every CPU Order!

800 • 801 • 4MAC
FAX • 310 • 533 • 0501

9600/200MHz

- 32MB RAM
- 4GB HD
- 12X CD

PowerPC

Monitor sold separately

$3295

8600/200MHz

- 32MB RAM
- 2GB HD
- 12X CD

PowerPC

Monitor sold separately

$2995

StarMax 4000/200MHz

- 32MB RAM
- 2GB HD
- 8X CD

MOTOROLA

$2295

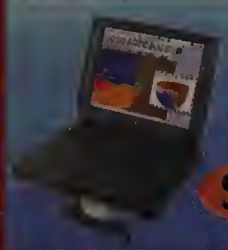
Umax S900/250MHz

- 32MB RAM
- 2GB HD
- 8X CD

UMAX®

$4499

PB 3400C/240MHz



- 16MB RAM
- 3GB HD
- 12X CD

PowerPC

$5849

PB 1400C/133MHz

- 16MB RAM
- 1GB HD
- 6X CD

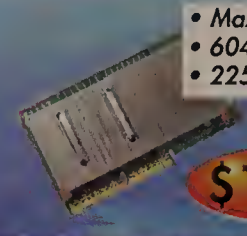
PowerPC

$3149

Apple Multiscan 1710

$699

Newer Technology



- MaxPowr
- 604E Processor
- 225 MHz Card

$1099

PowerMacs

9600/200	32/4GB/8XCD/L2	$ 3295
9600/200	MP 32/4GB/8XCD/L2	4495
9500/180	MP 32/2GB/8XCD/L2	2895
8600/200	32/2GB/12XCD/L2/ZIP	2995
8500/120	16/1.2GB/4XCD/L2 (R)	1899
7600/132	16/1.2GB/4XCD/L2 (R)	1599
7300/200	32/2GB/12XCD/L2	2399
7300/180	16/2GB/12XCD/L2	1999
7200/120	16/1.2GB/8XCD/L2	1199
7200/120	16/1.2GB/8XCD/L2 (R)	989
4400/200	16/2GB/8XCD/L2	1495

Motorola Starmax

3000/180 DT	16MB/1.2GB/8XCD/L2	$1259
3000/180 MT	32MB/2.5GB/8XCD/L2	1405
3000/200 DT	16MB/1.2GB/8XCD/L2	1479
3000/200 MT	32MB/2.5GB/8XCD/L2	1675
3000/240 MT	32MB/2.5GB/8XCD/L2	2139
4000/160 DT	16MB/1.2GB/8XCD/L2	1499
4000/160 MT	32MB/2.5GB/8XCD/L2	1689
4000/200 DT	16MB/1.2GB/8XCD/L2	1999
4000/200 MT	32MB/2.5GB/8XCD/L2	2295

UMAX Supermac

C600/180	16/1.2GB/8XCD/KEY/28.8	$ 1379
C600/200	16/1.2GB/8XCD/KEY/28.8	1579
C600/240	16/1.2GB/8XCD/KEY/28.8	1849
J700/150	16/2GB/6.7CD/KEY/VCard	2025
J700/180	24/2GB/6.7CD/KEY/VCard	2299
S900/250	32/2GB/8.0CD/KEY/VCard	4499
S900/240	32/2GB/8.0CD/KEY/VCard	4599
S900/225	32/2GB/8.0CD/KEY/VCard	3349
S900/200	Dual Processor Model	3895
S900/200	32/2GB/8.0CD/KEY/VCard	2995
S900/180	Dual Processor Model	3375
S900/180	32/2GB/8.0CD/KEY/VCard	2749

Performas

8400/180	16/1.6GB/8CD/Kbd/28.8	$1349
6400/180	16/1.6GB/8CD/Kbd/28.8/15"Multi.	1575
8400/180	16/1.6GB/8CD/Kbd/28.8/15"AV	1595
8400/180	Base Config./15" AV/1500 Printer	1759
6400/180	Base Config./15" AV/2500 Printer	1895
8400/200	18/2.4GB/8XCD/Kbd/28.8	1525
8400/200	16/2.4GB/8XCD/Kbd/28.8/Vid	1995

PowerBooks

1400C/133	16/1GB/6XCD	$ 3149
1400C/117	16/1GB/8XCD	2895
1400DCS	16/750MB/6XCD	2179
1400CS	12/750MB	1899
3400C/240	16/2GB/12XCD/Floppy	5849
3400C/200	18/2GB/6XCD/Floppy	4725
3400C/180	16/1.3GB/6XCD/Floppy	4349

Net Work Servers

500/132	32/2GB/CD/Dat/Unix	$ 8269
700/150	32/1GB/CD/UNIX	7699
700/150	48/4GB/CD/Dat/Unix	9695

Workgroup Servers

7250/120	16/2GB/CD/AS	$ 2469
8550/200	32/2GB/CD/Dat	4299
8550/132	24/2GB/CD/AS	4249
8550/200	32/2GB/CD/Datt/AS	4949

CD Rom Recorders

		Int	Ext
Ricoh	4xRd x2wrt COR w/Toast	$ 450	$ 525
Yamaha	400 CDR 6x4 Int. w/Toast	799	--
Yamaha	400 COR 6x4 Ext. w/Toast	--	899

Dos Cards

Apple	586 100MHZ	$ 675
Apple	Pentium 100MHZ	999

Keyboards

Apple	Design Extended Key.	$ 75
Apple	Extended Keyboard II	149
Radius	Extended Keyboard	49

Magneto-Optical Drive

Fujiitsu	640mb w/1 Media Internal	$ 479
Fujiitsu	640mb w/1 Media External	599
VST	EXPASION BAY 230MB (P8 190/5300)	375
VST	EXPASION HO 640MB (PB 190/5300)	389
Pinnacle	Vertex 2.6 Gig Optical	1399
Pinnacle	Apex 4.6 Gig Optical	1499
OLYMPUS	SYS 230MB External	399
OLYMPUS	POWERMO 2.6GB External	1599

Modem

Farallon	Netopia (ISDN)	$ 295
Glob. Vill.	Teleport 33.6	119
Glob. Vill.	PowerPort PC Card	263
Supra	Express Mod. 56E V.34	169
Supra	Express Mod. 56E SP	179

Monitors

Apple	Multiscan 15"	$ 375
Apple	Multiscan 15" AV	399
Apple	Multiscan 1705	599
Apple	Multiscan 1710	699
Apple	Multiscan 1710AV	799
Apple	Multiscan 20"	1499
Hitachi	All New Models	Call
Iiyama	All New Models	Call
Mitsubishi	All New Models	Call
NEC	All New Models	Call
Radius	All New Models	Call
Sony	All New Models	Call
Viewsonic	All New Models	Call

Printers

Apple	Stylewriter 1500	$ 199
Apple	Stylewriter 2500	329
Apple	LaserWriter 4/600	799
Apple	LaserWriter 12/640	1379
Epson	Stylus Color 600	299
Epson	Stylus Color 800	419
HP	LaserJet 4MV	2725
HP	Color LaserJet 5M	4939
HP	LaserJet 6MP	879

Removable Hard Drives

IOMEGA	ZIP 100MB Int. w/faceplate	$ 179
IOMEGA	ZIP 100MB External	139
IOMEGA	JAZZ 1GB w/ Cart.-built up	419
IOMEGA	JAZZ 1GB w/ Cart.-Original	439
SYQUEST	230 MB EZ Flyer	239
Syquest	1.5 GB Syjet Internal	389
Syquest	1.5 GB Syjet External	459

Removable H. D. Media

Iomega	100mb Zip Cartridges	$ 16
Iomega	1Gig Cartridges	83

SCSI Controller Cards

Atto	Pci Singel Channel Ultra	$ 339
Atto	Pci Multi Channel Ultra	695
Remus	Lite	849
Atto	Express Stripe	199
Micro Outlet	4GB Raid	999
Micro Outlet	8GB Raid	2995
Micro Outlet	18GB Disk Array	5995
Micro Outlet	36GB Disk Array	12175

Scanners

AGFA	Arcus II	$ 1559
AGFA	StudioScan IIsi	589
AGFA	Snapscan	269
Epson	Express. 636 Artist	1228
Epson	Express. 636 Exec.	769
Epson	Express. 636 Prof.	1699
Microtek	Scanmaker III	1339
Umax	Mirage D-16L	Call
Umax	VistaSGE FV Photo	532
Umax	VistaS12 Photo Dix.	449
Umax	VistaS12 FV Photo	619

Software Specials

Adobe	Illustrator V 6.0	$ 365
Adobe	PageMaker V 6.5	549
Adobe	Photoshop V 4.0	548
Adobe	Premier V 4.2	487
Connectix	Conflict Catcher 4.0	59
Insignia	Softwindows '95	339
Microsoft	Office V 4.2.1	449
Macromedia	Freehand V 7.0	399
Quark	Xpress V 3.3.2	639

Newer Technology

MAXPOWR	PCC604-250 OK-CACHE	$ 1099
MAXPOWR	PCC604-200 OK-CACHE	889
16SCE	ULTRAOOCK W/ETHERNET	469
ETHERNET	MICROOOCK FOR OUO 2300-2B0c	169

Video Cards

ATI	Exclaim GA 2MB	$ 229
ATI	Exclaim GA 4MB	325
ATI	Exclaim VR 2MB	220
ATI	Exclaim VR 4MB	289

Hard Disk Drives

		Internal	External
Quantum	Atlas 1.07 GB	$ 275	$ 340
Quantum	Fireball TM 1.2 GB	239	299
Quantum	Fireball TM 2.1 GB	317	382
Quantum	Fireball TM 3.2 GB	363	423
IBM	Ultrastar II 2.1 GB	403	463
Quantum	Atlas 2.1 GB	495	555
Seagate	Hawk 2.1 GB	499	559
Seagate	Barracuda 2.1 GB Narr	899	759
Seagate	Barracuda 2.1 GB Wide	704	804
IBM	Ultrastar II 4.32 GB	679	744
Fujitsu	Allegro 4.4 GB	825	885
Quantum	Atlas II 4.5 GB Ultra	839	899
Quantum	Atlas II 4.5 GB Wide	949	970
Seagate	Barracuda 4.3 GB Narr	999	1064
Seagate	Barracuda 4.3 GB Wide	1065	1165
Quantum	Atlas II 9.0 GB Ultra	1520	1585
Quantum	Atlas II 9.0 GB Wide	1520	1620
Seagate	Barracuda 9.0 GB Ultra	1950	1915
Seagate	Barracuda 9.0 GB Wide	1959	2059

Low Priced Memory

4MB	72 Pin Simm	$ 31
8MB	72 Pin Simm	46
16MB	72 Pin Simm	87
32MB	72 Pin Simm	169
8MB	168 Pin Dimm	52
16MB	168 Pin Dimm	89
32MB	168 Pin Dimm	169
64MB	168 Pin Dimm	325
8MB	PB 1400 Mem. Module	82
16MB	PB 1400 Mem. Module	120
32MB	PB 1400 Mem. Module	239
48MB	PB 1400 Mem. Module	CALL
8MB	PB 3400 Mem. Module	82
16MB	PB 3400 Mem. Module	125
32MB	PB 3400 Mem. Module	260
48MB	PB 3400 Mem. Module	329
16MB	Motorola Mem. Module	120
32MB	Motorola Mem. Module	195
64MB	Motorola Mem. Module	345
VRAM		
1MB	7200,7500,7600,8500 Series	$ 39
2MB	ATI VRam Card-9500 Series	99
2MB	Motorola Dimm Upgrade	79
4MB	Motorola Dimm Upgrade	125

Leasing Specialists

- Fast Approval
- Lowest Rates • No Advance Payments
- Tax Deductible
- Business & Personal Leasing Available
- Ask For The Leasing Department

Lease Special

9600/200 MHz MP
- 32MB RAM
- 4GB HD, 12X CD
- Apple 1710 Monitor
- Keyboard

36 Month Lease: $158

BankVest Capital Corp.

PowerPC

Financial Services

http://www.microoutlet.com email: sales@microutlet.com

GE 3 Year Extended Warranty

$351 to $700	$701 to $1200	$1201 to $2000	$2001 to $3000	$3001 to $4000	$4001 to $5000
$79.95	$139.95	$169.95	$199.95	$229.95	$259.95

B.V. 36 Month Lease Rates (FMV)

$3000	$5000	$7000	$10000	$12000	$15000
$109	$165	$231	$314	$377	$471

VISA

Micro Outlet 2785 Pacific Coast Highway #178 Torrance, CA • 90505 Business Hours: Monday-Friday 7:00 AM to 7:00 PM PST Saturday 10:00 AM to 2:00 PM PST

Due to publication time, the advertising prices may vary. All prices includes cash discounts. Not responsible for typographical errors. Shipping and service fees are non-refundable. No sales tax outside of CA. All returns subject to 15% restocking charge. All returns must have an authorization number (R.M.A.) Graphics shown do not necessarily represent actual product.

CIRCLE 472 ON READER SERVICE CARD

www.applemacnet.com

HOT DEALS

Global Village Teleport Speakerphone
Call sensing,internet access
Voice mail,Caller ID* * & more...

Now $99.○
**when available

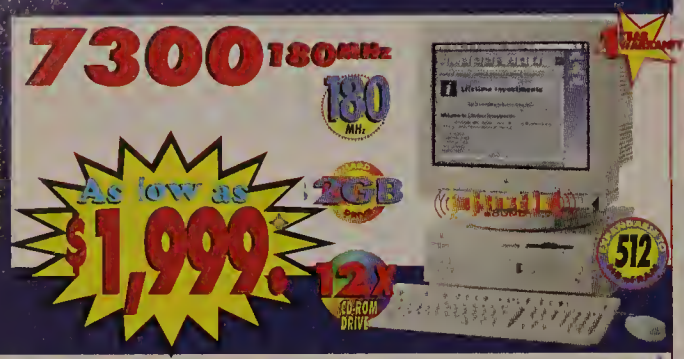
we beat any price advertised in this magazine!

○ call for details!

PowerMac 4400 200 MHz
•603e Proc.
•200mhz
•16MB/8XCD
•2GBMB HD
•L2 Cache
•Ethernet

WOW!! FOR ONLY $1,449.

APPLE COMPUTERS



7200 120MHz/16MB/1.2GB/8XCD/1MBVR $1,099.00
9500MP 180MHz/32MB/2.0GB/8xCD $2,899.00

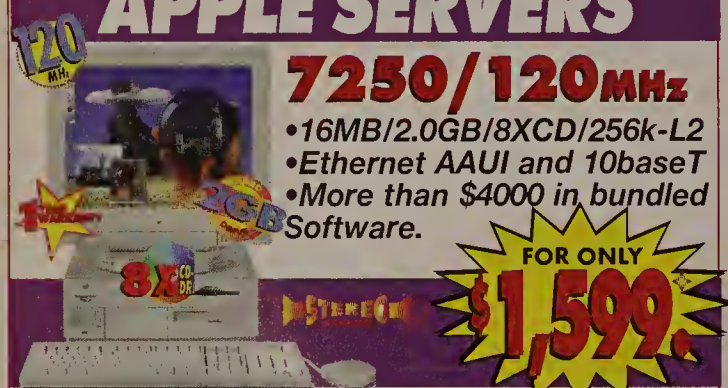
NEW! POWER MACS

7300 200MHz/16MB/2GB/12XCD/KYBD $2,349.00
8600 200MHz/32MB/2GB/12XCD/KYBD $2,659.00
9600 200MHz/32MB/4GB/12XCD/KYBD $3,339.00
9600MP 200MHz/32MB/4GB/12XCD/KYBD.....$3,339.00

POWERBOOK

PowerBook1400cs/117MHz 16MB/750MB/6XCD/11.3" Dual-Scan Displ...$2,499.
PowerBook1400c/117MHz16MB/1.0GB/6XCD/11.3" Active Matrix Displ...$3,299.
PowerBook1400c/133MHz16MB/1.0GB/6XCD/11.3" Active Matrix Displ...$3,899.
PowerBook3400c/200MHz16MB/1.3GB/6XCD/11.3" Active Matrix Displ...$4,999.

APPLE SERVERS



WorkGroup Server Solution
7250120MHZ/16MB/2.0GB/8xCD.....$1,599.00
8550200MHZ/32MB/2.0GB/8xCD/DAT.....$4,199.00

Internet Server Solution
7250120MHZ/16MB/2.0GB/8xCD.....$1,949.00
8550200MHZ/32MB/2.0GB/8xCD.....$3,999.00

Apple Share Server Solution
7250120MHZ/16MB/2.0GB/8xCD.....$2,299.00
8550200MHZ/32MB/2.0GB/8xCD/DAT.....$5,299.00

Software Bundle Includes: File Wave / Now Contact/Virex Now Up•To•Date /Net Octopus/Viper instant Access/Skyline/Satellite 4 Sight Fax Server .
Software Bundle may vary over the life of this product. monitor & keybord not included!

MEMORY

16 MB

memory prices are subject to change without notice.

DIMMS
8MB (70ns) $39.00
16MB (70ns).....$89.00
32 MB (70ns).....$179.00
64MB (70ns).....$349.00

SIMMS
8MB (70ns).....$39.00
16MB (70ns).....$89.00
32 MB (70ns).....$179.00

MONITORS

Apple 15AV*

Apple
Multiscan 1705.....$629.00
Multiscan 1710.....$779.00
Multiscan 1710AV.....$859.00
Multiscan 20".....$1,669.00

Sony
100SX 15".....$379.00
100Sf 15".....$429.00
200SX 17".....$639.00
200Sf 17".....$929.00
300Sf 20".....$1,589.00
Se2 20".....$1,799.00

SCANNERS

Scanmaker E3

Agfa
SnapScan.....$299.00
StudioStar.....$699.00
Arcus II.....$1,699.00

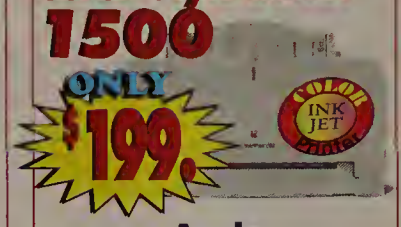
Microtek
ScanMaker E6.....$349.00
ScanMaker III.....$1,299.00

LaCie
silverscanner Pro
ONLY $399

Silverscanner IV.....$1,199.00

PRINTERS

Color Stylewriter 1500



Apple
Color StyleWriter 2500.....$289.00
Laserwriter 4/600.....$779.00
Laserwriter 12/660.....$4,999.00
Laserwriter 12/640.....$1,439.00

HP
DeskJet 870CXI.....$465.00
DeskJet 870Cse.....$489.00
DeskWriter 1600CM.....$1,859.00
LaserJet 5MP.....$1,019.00
LaserJet 6MP.....$919.00

Epson
Stylus Color 600 .....$289.00
Stylus Color 800 .....$429.00
Stylus Color 1500 .....$939.00
Stylus Color Pro.....$389.00
Stylus ColorPro XL.....$1,639.00

Tektronix
Phaser 140i.....$1,479.00
Phaser 350.....$3,199.00

SOFTWARE

Quark Xpress V3.32

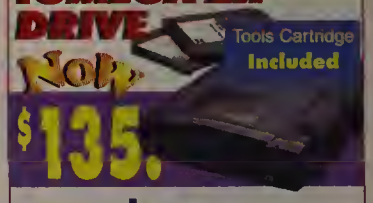
Adobe Systems
PageMaker 6.5.....$399.00
Photoshop 4.0.....$399.00
Illustrator 6.0.....$349.00
Page Mill 2.0.....$99.00
Premiere 4.2.....$599.00

Macromedia
Director.....$799.00
Free Hand..V7.0.....$199.00

Specular
3D Web Workshop.....$139.00
Infini-D 2.5 (3D/Animat.).....$569.00

MEDIA

IOMEGA ZIP DRIVE



Iomega

	Drive	Cartridge
ZIP	$135.00	$ 14.00

Syquest/Microtech

	Drive	Cartridge
EZ 135	$109.00	$ 19.00
EZFlyer 230	$259.00	$ 23.00
SyJet 1.5GB	$479.00	$109.00
200 Meg	$339.00	$ 59.00
270 Meg	$219.00	$ 46.00

IOMEGA JAZ

• No Cartridge

ONLY $359.

JAZ Ext. w/3 Cart.....$589.00
JAZ Int. w/Br.ackets.....$339.00
JAZ 1GB Cartridge.....$85.00

MODEM

SUPRA 33.6

Farallon
Netopia™ ISDN $289.00
Netopia 440 Internet router....$599.00

Global Village
Telep. Platinum 36.6.....$165.00
Platinum PC Pro $439.00

Hayes
*Accura 288 v.34 (Ext.).....$149.00
*Optima 288 (Ext.).....$269.00

Supra
SupraSonic™ 33.6.....$239.00
Supra Fax M 288 33.6.....$179.00

U.S.Robotics
*Sportster 33.6 Fax/M.....$165.00
Sportster Voice 28.8.....$189.00

*After Manuf. rebate!

LACIE LIMITED Products

Hard Drives

Capacity	Int.	Ext.
2.1 GB	$319	$399
2.1 GB AV	$349	$429
3.1 GB	$379	$469
4.3 GB AV	$659	$719
4.5 GB AV	$869	$979
9.0 GB AV	$1,599	$1,679

8X CD-ROM ONLY $189

CD-ROM/CD-R
2X/6X CD-R w/Toast 650MB/90m....$399.00
4X/6X CD-R w/Toast 650MB/20m...$759.00
12X CD-ROM.....$229.00
8X 4CD 's external autoloader 8X....$289.00

Backup Drives
4GB Travan 4.8GB $479.00
8GB DAT DDS-2 ,SDT5000 .....$939.00
8GB Turbo-DATDDS-2,SDT7000.$1,039.00
12GB DAT DDS-3 ,SDT9000.....$1,399.00
25GB SDX 300.....$4,599.00
30GB DLT Quantum w/tape & $2,759.00
40GB DLT Quantum w/tape & $4,599.00
*All Backup drives come w/SCSI cable & Retrospect

Magneto/Opticals
640MB Fujitsu 640 Optical.....$479.00
2.6GB Sony 2.6GB Optical.....$1,849.00

CALL 1-800-404-9976

FedEx

SCHOOLS and Corp. POs are WELCOME

American Express Discover NOVUS MasterCard VISA

When ordered w/ Stylewriter 1500 printer

*All PRICES ARE CASH DISCOUNTED! PRICES & PRODUCT AVAILABILITY SUBJECT TO CHANGE WITHOUT NOTICE. *All orders returned are subject to a restocking fee! call for an RMA # first ! Thank you!

CIRCLE 420 ON READER SERVICE CARD

CALL THE MAC EXPERTS!

Providing complete Macintosh solutions for graphics, pre-press, and video professionals

MacUser Labs Says:

"Four Mice! A PowerMax Power Play" *and* "Not only do the PowerMax monitors display good-looking images, but (they) are affordably priced!" *and* "Nice price, nice image quality, nice controls – nice monitor!"

PowerMax Trinitron™ monitors are designed specifically for the rigorous demands of the Macintosh. They ship complete with Mac-ready cables and adapters, a three year warranty, and our satisfaction guarantee: if the monitor is not just right, we'll replace it for you!

PowerMax Trinitron™ Monitors

- **Model PM15T** 25 mm dot pitch- up to 1280x1024 ..... $419
- **Model PM17T** 25 mm dot pitch- up to 1280x1024 ..... $719
- **Model PM17TE+** 25 mm dot pitch- up to 1600x1280 ... $899
- **Model PM20T** 30 mm dot pitch- up to 1600x1280 ... $1599
- **Model PM21T-** New! 21" Diamondtron! .. $1647
- **Model PM20T+** W/ 25 mm dot pitch! $1799

We're Wacom Experts!

- ArtPad II 4x5 w/erasing Ultra Pen $139
- ArtPad II 4x5 w/erasing Ultra Pen w/Dabbler $159
- ArtZ II 6x8 w/erasing Ultra Pen $309
- ArtZ II 6x8 w/erasing Ultra Pen & Painter 4 ..... $579
- ArtZ II 12x12 w/erasing Ultra Pen $439
- ArtZ II 12x12 w/erasing Ultra Pen & Painter 4 ..... $689
- ArtZ II 12x18 w/erasing Ultra Pen $699

We carry all Wacom Accessories, Pens and Tablets! You won't find anyone who knows more about Wacom!

Super Printers at Super Prices!

- Apple StyleWriter 1200- special ref. package! $139
- New Apple Color StyleWriter 1500 ..... $209
- Apple Color StyleWriter 2500- special ref. package! $249
- Canon 11x17 Color Bubble Jet $499
- Apple LaserWriter Select 360- hard to find! $1099
- Epson Stylus Color Pro 11x17 Inkjet $1449
- GCC Elite XL 608 11x17 800/600 dpi w/6 Mb ram .. $2298
- GCC Elite XL 808 11x17 800 dpi w/12 Mb ram $2949
- Kodak XLS8650 Color Dye Sublimation Printers ..... $Call!

Need a scanner? We stock: Agfa •Apple •Epson •Hewlett Packard •Microtek •Nikon •Linotype Hell •Polaroid •Umax

Call one of our PowerMax scanner experts about your specific needs. We can recommend one that's just right for you: all the latest models at the nation's best prices!

A 200 MHz shootout! Save hundreds of dollars on these specially priced 200 MHz systems! Or call for your own custom configuration, usually with same day delivery!

Apple 200 MHz System

PowerMac 8600/200 with **64** Mb Ram, 2 gig drive, internal 12x CD-rom, internal Zip drive, ext. keyboard, 17" PowerMax Trinitron monitor, commercial surge protector, 10 Pack of Zip disks, Canvas 3.5. Only **$4199**, or just **$161 per month!**

PowerTools 200 MHz System w/SCSI!

PowerTools 604E 200Mhz with **64** Mb Ram, 2.5 Gb SCSI drive, internal 12x SCSI CD-rom, internal Zip drive, ext. keyboard, 17" PowerMax Trinitron monitor, commercial surge protector, 10 Pack of Zip disks, Canvas 3.5. Only **$3449**, or just **$132 per month!**

PowerComputing 200 MHz System

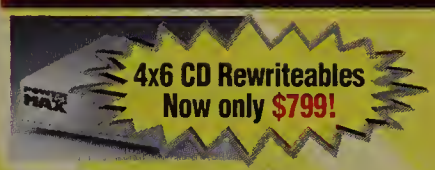
Power Tower Pro 200 with **64** Mb Ram, 2 gig drive, internal 8x CD-rom, internal Zip drive, ext. keyboard, 17" PowerMax Trinitron monitor, commercial surge protector, 10 Pack of Zip disks, Canvas 3.5. Only **$3949**, or just **$151 per month!**

SuperMac 200 MHz System

SuperMac S900 200 MHz with **64** Mb Ram, 2 gig drive, internal 8x CD-rom, internal Zip drive, ext. keyboard, 17" PowerMax Trinitron monitor, 4 Mb video card, commercial surge protector, 10 Pack of Zip disks, Canvas 3.5. Only **$4449**, or just **$171 per month!**

Receive Canvas 3.5 FREE with every CPU- a $300 value!
PLUS- upgrade to Canvas 5 for only $129!

PowerMax External Hard Drives



Arrays are our speciality!
•Atto •Micronet •FWB •Optima

- PowerMax External 540 Mb Drive $229
- PowerMax External 1.2 Gig Drive $319
- PowerMax External 2.0 Gig Drive $419
- New! PowerMax External 4.0 Gig Drive $598

Call for the absolute lowest prices *and* immediate delivery on the following products:

Displays: Apple, CTX, Hitachi, InFocus, LaCie, Mag, Magnavox, Mitsubishi, NEC, PowerMax, Radius, Samsung, Sony, ViewSonic
RAM: We stock lifetime-warranted RAM for every model of Mac made!
Software: Adobe, Acius, Claris, Deneba, LucasArts, MacroMedia, Microsoft, Mindscape, Netscape, Now, Quark, Specular, Symantec and dozens more!
Scanners: Agfa, Apple, Epson, Hewlett Packard, LaCie, Linotype, Microtek, Nikon, Polaroid, Umax, Visioneer
Printers: Apple, Canon, DataProducts, Epson, Fargo, GCC, Hewlett Packard, Kodak, Lexmark, NewGen, QMS, Tektronix, Xante
Storage: Atto, Iomega, Kodak, LaCie, Micronet, NEC, Olympus, Optima, PowerMax, Quantum, Seagate, StreamLogic, Sony, Syquest
Modems: Boca, Dayna, Global Village, Hayes, Motorola, US Robotics
Video: ATI, Focus, IMS, Media 100, Miro, Number 9, Radius, TrueVision

Why Buy From PowerMax?

- Most orders ship within 24 hours- even customized systems!
- We speak plain English- no technotalk or high pressure sales tactics!
- We offer flexible terms, and are experts on easy leasing!
- Aggressive purchasing and high volume means super low pricing!
- We consult with you, we want to make sure what you buy is what you need. And y'know what, we're really nice people. Try us and see!

Overwhelmed? Only PowerMax will give you the straight scoop on the pros and cons of each model and manufacturer!

No one stocks more and knows more about Apple New, Apple Vintage, Apple Refurbished & all Compatibles!

- Performa 6200 Ref 8/Gig/4x CD/Modem Wow! $688
- Performa 6300 Ref 16/1.2/4x CD $829
- Performa 6320 Ref 16/1.2/4x CD/TV $888
- Performa 5260/120 Ref 16/1.2/4x CD/15" $1088
- Performa 6360 160 16/1.2/8x CD ..... $Call!
- Performa 6400/180 16/1.6 Gig/8x CD ..... On $pecial!
- Performa 6400/200 16/2.4 Gig/8x CD .. $Blowout Deals!
- Performa 4400/200 16/1.2 Gig/8x CD $1599
- New! PowerMac 6500/225 32/2000/12X/Zip $1899
- New! PowerMac 6500/225 32/3000/12X/Zip/Mod $1955
- New! PowerMac 6500/250 32/4000/12X/Zip/Mod $2249
- New! PowerMac 6500/250 32/3000/12X/Multim.. $2389
- New! PowerMac 6500/250 48/4000/12X/Zip/Mod $2549

Customizable Macs- We configure any way you want!

- PowerMac Ref 7200/120 16 Ram/8x CD $849
- PowerMac 7200/120 16 Ram/8x CD $1088
- PowerMac 7300/180 16 Ram/12x CD $1829
- PowerMac 7300/200 16 Ram/12x CD $2269
- PowerMac 8600/200 32 Ram/12x CD/Zip/KB $2795
- PowerMac 9600/200 32 Ram/12x CD $2899
- PowerMac 9600/200MP 32/12x CD ..... $Call!

Apple Powerbooks

We stock all 1400, 3400, and Duos at outrageously low "cost-plus" prices! Call for today's lowest price!

Umax SuperMac Compatibles

- SuperMac C600/180 16/1.2/CD/28.8 Mod $1395
- SuperMac C600/200 16/2 Gig/CD/28.8 Mod $1595
- SuperMac C600/240 16/2 Gig/CD/28.8 Mod $1895

Customizable Supermacs- Configure any way you want!

- SuperMac S900/180 16/CD/Vid/KB $2548
- SuperMac S900/200 32/CD/Vid/KB $2798
- SuperMac S900/233 32/CD/Vid/KB $3598
- SuperMac S900/200 Dual Proc. 32/CD/Vid/KB $3798
- SuperMac S900/250 32/CD/Vid/KB $4298

We also stock all models of StarMax, PowerTools and PowerComputing at super low prices!

POWER MAX
Knowledge is Power

800-613-2072

Local line: (503) 624-1827 • Fax (503) 624-1635
http://www.powermax.com • E-Mail: powermax@europa.com

Prices subject to change without notice. Prices reflect cash discount.

We accept educational and corporate purchase orders, and are experts in financing for virtually any size business!

CIRCLE 446 ON READER SERVICE CARD

"Custom Configuration Specialists"
- Dealers & International sales welcome!
- Govt.,University & Corporate P.O's Welcome.
- Best Prices, Service & Delivery.

Infinity Micro

One stop shopping for all your software & hardware needs!

800 • 589 • 1234

TEL 310•470•9426 FAX 310•470•4956

Web Site @ www.infinity-micro.com

GCC TECHNOLOGIES · UMAX · nubus · RASTEROPS · Seagate · Apple · DAYSTAR · HEWLETT PACKARD · QMS

Largest & Most Complete Mail order Source!

2289 Westwood Blvd. Los Angeles, CA. 90064

Email us at: Infinity@themall.net

POWERMAC

4400/200 16/1.2/8XCD/KB	$1479.
6100/66 8/500/CO	$695.
6100/66 16/500/CO/DOS	$695.
7100/80 8/500/CD	$895.
7300/180 16/2G8/CD/KB	$2039.
7300/200 32/2G8/CD/KB	$2395.
8100/80 16/700/CD	$1195.
8100/100 16/1GIG/CD/AV	$1595.
8100/110 16/2G/CD	$1795.
7200/75 8/500/4XCD	$CALL.
7200/90 8/500/4XCD	$ 895.
7200/120 16/1G/4XCO	$ 995.
7200/120 16/1.2/8XCD	$1145.
7200/120 8/1.2/4CD/PENT.	$1695.
7500/100 16/1G/4XC	$1295.
7600/120 16/1.2G/4XCD	$1495.
7600/132 16/1.2/8XCD	$1595.
8500/120 16/2G/4XCD	$1695.
8500/132 16/1G/4XCD	$1795.
8500/150 16/2G/8XCO	$2045.
8500/150 16/1.2/8XCO	$2095.
8500/180 32/2GIG/8XCD	$2695.
8600/200 32/2GB/CD/zip/kb	$3045.
9500/132 16/1G/4XCD/ATI	$1795.
9500/150 16/2G/4XCD/ATI	$2345.
9500/180MP 32/2G/8XCD	$2895.
9500/200 32/2GIG/8XCO	$3195.
9600/200 32/4GB/CD/KB	$3249.
9600/200MP 32/4G8/CD/K8	$4195.
6500/250 48/4G8/CO/Z/F/K8	$2449.
650D/250 32/4G8/CO/ZIP/KB	$2179.
6500/225 32/3GB/CD/3F/KB	$1889.

W.G. SERVER'S

7250/120 16/1G8/CO	$1245.
7250/120 16/2G8/CO/INT.	$2095.
7250/120 16/2GB/CO/AS.	$2495.
8550/132 24/2G/CO/DAT	$2495.
8550/132 24/2G/CD/DT/AS	$2795.
8550/200 32/2GB/CD/AS	$4095.
8550/200 32/2GB/CD/DAT	$4295.
9150/120 16/1G8/CD	$1545.
500/132 32/0/CD	$6595.
500/132 32/2G8/CO/DAT	$7845.
700/150 32/1G/CO	$7495.
700/150 48/4G/CO/DAT	$9495.
700/200 48/2GB/CD	$10795.

SUPERMAC / UMAX

UMAX S900/180Mhz 32/2.1HD/6Pci/KB	$3495.
UMAX S900L/225Mhz 32/2GB/8x/8M Vram	$3495.
UMAX S900/200Mhz 32/2.1 HD/6Pci/KB	$3045.
UMAX S900/180Mhz 32/2.1HO/6Pci/KB	$2895.
UMAX C500/180Mhz 16/1.2G8/8XCD	$2895.
UMAX J700/150Mhz 16/2.1/4PCI/KB	$1989.
UMAX J700/180Mhz 24/2.1/IMS 2MB	$1895.
UMAX C600/240Mhz 24/2.1/28.8Mdm.	$1895.
UMAX C600/200Mhz 16/1.2GB/8X/28.8	$1645.
UMAX C6D0/18DMhz 16/1.2HD/8xCd/28.8	$1385.

PERFORMA

580 8/800/KB	895.
5215 8/1G/CD/14.4	949.
5260 16/800/CD	1195.
5300 16/1GIG	1195.
5400 16/1.2/CO	1295.
640DOS 12/500/CO	745.
6116 8/700/CO/14"	895.
620D 8/1G/CD/14"	895.
6220TV 16/1.2G/CD	695.
6300 16/1.2/CO	795.
6320CD 16/1G/CD	845.
6400/180 32/2G/CO	995.
6400/200AV16/2.4/CO	1495.

POWERBOOK

Global Village 14.4 Fax $ 89.

150 8/240	$ 795.
190 & 190CS	$ 895.
280C 12/320/MOM	$1095.
520 8/240	$1095.
520C 20/240/FAX	$1295.
540C 16/500/14.4/100Mhz	$1795.
540C 16/500/19.2/100Mhz	$1845.
1400CS /117 12/750	$1795.
1400CS /117 16/750/6XCO	$1995.
1400C/117 16/1 GIG/CO	$2795.
1400C/133 16/1GB/CO	$2895.
2300C 8/750/14.4 Fax	$1395.
2300C 20/1G8/MOM	$1645.
2300C 20/1G8/MDM+DOCK	$1795.
3400C/180Mhz 16/1.3GB	$4095.
3400C/180Mhz 16/1.3/GB/CO	$4695.
3400C 200Mhz 16/2G8/CO	$4795.
5300 8/500 MONO	$1195.
5300CS 8/500	$1595.
53DOCS 16/750	$1795.
5300C 8/500	$1995.
5300C 16/750	$2195.
5300CE/117 32/1G8	$2595.

Powerbook Dua 2300C 20/1GB/FX + Duo Dock " Demo" $1899.

POWER COMPUTING

PowerTower Pro 225MHz 16/2G8/8XCD	$CALL.
PowerTower Pro 180MHZ 16/2G8/8XCO	$CALL.
PowerTower Pro 180MHz 16/2gb/8XCO	$CALL.
PowerTower Pro 166MHz 16/2GB/8XCD	$CALL.
PowerCenter 180MHz 16/2GB/8xCD/KB	$CALL.
PowerCenter 150MHz 16/2GB/8xCD/KB	$CALL.
PowerBase 200MHz 16/1GB/8xCD/KB/Low	$CALL.
PowerBase 200MHz 16/1GB/8xCD/KB/Minl	$CALL.
PowerBase 240Mhz 16/1.2//8xCD/KB/Low	$CALL.
PowerBase 240Mhz 16/1.2//8xCO/KB/Mini	$CALL.
PowerWave 132MHz 16/1G8/4xCO/K8	$CALL.

IOMEGA JAZZ & ZIP

Iomega Zip Drive	$149.
Iomega Jazz Dr.w. one cart.	$419.
EZQUEST Jazz 1GB drive	$459.
Iomega Zip Cartridges 10pk.	$139.
Iomega Jazz Disk Cartridge	$ 95.

MONITORS

Apple 14" Multiscan	$249.
Apple 15" Mutiscan	$279.
Apple 17" Multiscan	$645.
Apple 1705/1710	$545./$835.
Apple 1710AV Multiscan	$ 949.
Apple 20" Multiscan	$1195.
Magnavox 20" Color	$795.
Radius Intellicolor 20e	$1095.
Radius PrecisionColor 20"	$895.
Radius PrecisionColor20V	$995.
RasterOps MC-17 17"	$779.
RasterOps MC-801 21"	$1499.
RasterOps MC-801HR	$1949.
RasterOps MC-21	$1659.
PRESSVIEW 17SR	$1849.
PRESSVIEW 21SR	$3079.
PRESSVIEW 21T/CALI	$1895.
MULTIVIEW 21"	$1595.
SuperMatch 21TXL w/Calib.	$1895.
Sony 100SX/100SF	$359./$435.
Sony 200SX/200SF	$639./749.
Sony 17SE2/20SEII	$849./1795.
Sony 300SF-20"	$1579.
ViewSonic 17GA -17"/.27	$675.
ViewSonic 17EA-17"	$599.
ViewSonic GT-770 17",.25	$695.
ViewSonic GT-800 20"	$1249.
ViewSonic PT-810 21",.25MM	$1599.
ViewSonic P810 21",.25MM	$1495.
ViewSonic P815 21",.25MM	$1649.
ViewSonic G810 21",.25MM	$1455.

MOTOROLA STARMAX

3000/180 16/1.2GB/8XCD	$ 1249.
3000/180 32/25.GB/8XCD	$1395.
3000/200 16/1.2GB/8XCD	$1479.
3000/200 32/2.5GB/8XCD	$1649.
4000/160 16/1.2GB/8XCD	$1499.
4000/160 32/2.5GB/8XCD	$1689.
4000/200 16/1.2G8/8XCO	$2129.
4000/200 32/2G8/8XCO	$2299.

SOFTWARE PACKAGES

Adobe Photoshop 3.05	$ 299.
Adobe Illustrator 6.0	$ 299.
Adobe Pagemaker 6.5	$ 299.
Adobe After Effects	$1245.
Quark Express package	$ 649.
Microsoft Office package	$ 295.

PRINTERS

StyleWriter II	$199.
StyleWriter 1200	$149.
StyleWriter 1500	$169.
Port. Stylewriter 2200	$389.
Stylewriter 2400	$199.
StyleWriter 2500	$249.
LaserWriter 4/600	$695.
LaserWriter 12/640	$1479.
LaserWriter 12/600	$1995.
Color LaserWr. 12/660PS	$5295.
Epson Stylus 600	$295.
Epson Stylus 800	$489.
Epson Stylus Pro-XL	$1445.
Epson post script option	$349.
Epson Ethernet option	$349.
Fargo Primera Pro	$1345.
Fargo Pictura 310	$2195.
Fargo Pictura 310ethernet	$3279.
Fargo Postscript option	$345.
Elite XL-1212 Laser	$1245.
Elite XL-608 w. toner	$2195.
Elite XL-616 11X1,600dpil	$2395.
Elite XL-808 11X17,800dpl	$2649.
Elite XL-1208 super size	$3779.
HP DeskWriter 340 Port.	$329.
HP DeskWriter 680c	$299.
HP DeskWriter 855cxi	$479.
HP LaserJet 1600CM	$1679.
HP LaserJet 4MV	$2195.
HP LaserJet 5SIMX	$5395.
HP Color Laser 5M	$1995.
HP Laserjet 6MP	$895.
HP LaserJet 5M	$1695.

APPLE RELATED CARDS

Centris 610/660AV nubus adapter	$19.
Apple 486DX-6100 Oos card	$149.
Apple Pentium 100Mhz card	$895.
IMS Twin Turbo 8M8 PCI	$545.
ATI Xclaim-VR 4Mb card	$279.
Precision Color 24/1600	$395.
Radius Thunder30-1600 6M8	$679.
Radius Thunder Color/30-1600	$1899.
Radius Thunder Power/30-1600	$845.
Radius Thunder Power/30-1920	$1179.
Radius Thunder 30 Pci card	$2749.
Truevision 8ravado 1000	$589.
TrueVision Targa 1000	$CALL.
TrueVision Targa 2000Pci	$2695.
TrueVision Taga 2000Pci Pro	$3095.

SCANNERS

AGFA Transparanci option	$379.
AGFA StudioScan II Color	$795.
AGFA Arcus II w. transparanci	$1729.
EPSON ES-1000C COLOR	$585.
Epson Exp. 636 Executive	$849.
Epson Exp. 636 Artist 600dpi	$1285.
Epson Exp. 636 Professional	$1695.
Microteck Scanmaker E3	$345.
Microteck ScanMaker E6 STD	$569.
Microteck ScanMaker E6 Pro	$845.
Microteck ScanMaker III	$1375.
Microteck ScanMaker 35T Plus	$745.
Microteck ScanMaker Internet	$565.
Umax Vista S6E 300dpi color	$299.
Umax Vista S12 600dpi,OCR	$599.
Umax Vista S12 600dpi,Pgmngr	$695.
Umax PowerLook II w. UTA	$1795.

Used powerbooks 160/180/540/230/280 all Available in stock please call.

DIGITAL CAMERA'S

Ricoh RDC-2 w. Monitor	$949.
Kodak OC 25	$459.
Kodak DC 20	$179.
Kodak DC 50	$637.
Casio QU-300 w. monitor	$679.

PINNACLE MICRO

Apex 4.6GB optical	$1485.
Vertex 2.6G8 optical	$1349.
RCO 4x4 Mac	$877.

FedEx

GROUND
3 DAY SHIPPING
INSTEAD OF 7 DAYS
AVAILABLE NOW!
THAT'S WHATS
MAKING US SO
GREAT!!!
Cheeper, Faster & better

Global & Supra Faxs

Teleport 24/96 modem	$19.
Teleport Platium 33.6	$169.
Teleport Speaker/voice	$259.
Powerport Platinum	$269.
Powerport Platinum Pro	$429.
Supra 33.6 fax modem	$149.
Supra 33.6 fax/voice	$289.

Magnavox 20" Multiscan Color $895.

TRADE IN YOUR: old PowerMac or Power8ook with newer units

All MEMORY UPGRADES AVAILABLE PLS. CALL!

POWERBOOK 5300C 16/500 14.4 FaxModem $1999.

AT&T LEASING SPECIALIST!!!

AT&T 24 Houre quick turnaround!!!

GE 3 YEAR ON-SITE WARRANTY "Over 2700 products to choose from!"

$ 701 To $ 1200	$1201.To $ 2000.	$2001To $ 3000	$3001 To $ 4000	$ 4001 To $ 5000
$ 135.95	165.95	189.95	$ 219.95	$ 249.95

• Govt..& university P.O.'S welcome • Prices are cash discounted and are subject to change without notice. We accept Visa, Mast.& Amex .•

TRADE YOUR MAC FOR A NEW ONE. We Pay Top $$$ For Your Mac & Mem.

We custom configure and test your system. Specializes in Pre-Press, Publishing, Digital Video products.

WE BUY • SELL • TRADE Competitive Leasing Rates are Available FREE MOUSE PAD WITH EVERY ORDER

PowerMacs

9600 200 MHZ MP	4170
9600 200 MHZ	3290
8600 200 Mhz +ZIP	3395
8500 180 16-2G8-CD	2290
8500 132 MHZ	1650
7300 180 MHZ	2035
7200 120Mhz	1140
Call For 235& 200 Mhz	
4400 200Mhz	1390
7200 /75/90/120	CALL
Call for config. not listed	

Powerbooks

3400C 235 Mhz	5295
3400C 200Mhz	4590
1400C 16-1Gb-CD	2795
1400cs 12/750	1635
5300c 16/750	1690
Call for New PB 3400	

Demo Powerbooks

PB 180c Color	850
520C / 540C	999/1299
5300c 16/750	1690
145 - 170 -180c-165c	CALL
5300CS 8/500	1499

Upgrades

Same day Upgrade No down Time!!	
Prf 63X to 6300 603-100Mhz	595
PM 7200 to 604-120Mhz	725
8100 to 8500/180Mhz	1625
7500 to 604-120/132	250/350
Upgrade to 200 or180 Mhz	CALL
All Power8ook Upgrade	CALL
7100/ 80 to 7500/ 100	650
P8 520 / 540 to 167 MHZ	735
Q800-840 to 8100	550
PB 5300 to 1400/CD	CALL
Call forUpgrades not listed	

Demo Macs

8500 132/120	1590 / 1490
8100 /AV	999
8100/110 16/2GB/CD	1190
Q 800/ 840/950	625 / 745
Q630 8/230	450
6200 8/1.2	750
PM 7500 /7600	1250/1445
8500 150	1850

Performa

4400-200/180	1525/1075
Call for latest prices.	
6320/6400/6214/5212/575	

Memory

Dimms 16/32/64	72 /185/335
30 Pin 1/ 4/16	8 / 26 / 98
72 Pin 8/16/32	32 /72 /159
2X - 4X-8x CD	50 /119/195
HD 1.G8 - 2.G8-4G8	Call
Iomega Jazz Drive	355
Global Village Modem	139

Call For: Monitors, Printers, Scanners. All Apple Parts In Stock and We do Advance exchange. Leasing Available.

Parts

Floppy 1.44	85
POWER SUPPLIES	CALL
AV Card	$175
Logic Bd 180/ 200Mhz	899/ 999
Call for Logic Boards & more	

Computer Graphics & Networking

All prices Reflect cash Discount
Visa, Mastercard, Amex Accepted
<< Prices are subject to Change.>>

TEL: 310-441-4771 10922 W. Pico Blvd. Los Angeles, CA 90064 Fax: 310-441-4770

CIRCLE 432 ON READER SERVICE CARD

Business Leasing By

MWAd# 0797

LeaseCard

VISA MasterCard

All Prices Are Based on C.O.D. Order & Subject to Prior Sales & Change!

* Factory refurbished with Warranty

COMPU.D

International, Inc.

1-800-929-9333

http://www.compu-d.com

Sales (818) 787-3282

Fax (818) 787-5555

e-mail:csales@compu-d.com

FedEx DHL

Fast Worldwide Shipping

PowerMacs

4400/200	32-2GB, 12xCD, DOS	CALL
4400/200	32-2GB, 12xCD, 33.6, Office	$1945
4400/200	16-1.2GB, 8xCD	$1475
6500/250	48-4GB, 12xCD, Zip, Office	$2495
6500/250	32-4GB, 12xCD, Zip	$2145
6500/225	32-2GB, 12xCD, 33.6	$1945
7200/120	16-1.2GB, CD	$995
7200/120PC	16-1.2GB, CD DOS	CALL
7300/200	32-2GB, 12xCD	$2195
7300/180	16-2GB, 12xCD, DOS	CALL
7300/180	16-2GB, 12xCD	$1865
7600/132	16-1.2GB, CD	$1595
8500/180	32-2GB, CD	CALL
8600/200	64-4GB, 12xCD, Zip	$3595

8600/200 32-2GB, 12xCD, Zip $2795

9600/200MP 32-4GB, 12xCD $3895

9500/150	16-2GB, CD	$2095
9500/180MP	32-2GB, CD	$2795
9500/200	32-2GB, CD	$2695
9600/200MP	64-9GB, CD	$4995
9600/200	32-4GB, 12xCD	$3095
9600/200	32-0HD, 12xCD	$2295

COMPU-D Deal of the month

DIMM Memory

We will beat any price including installation

Performa

6400/200	16/2.4GB, 8xCD, KB.	$1195*
6400/180	16/1.6GB, 8xCD, KB.	$1195
6400/180	16/1.6GB, 8xCD, KB.	$975*
6300/100	8/1GB, CD	$795*
6360/160	16/1.2GB, CD, KB. 28.8	$999
6220/75	16/1GB, CD TV, KB., Modem	$895
6200/75	8/800, CD	$675
5260	16/1.2GB CD, SVGA Mntr., KB.	$1095

6400/200 16/2.4GB, 8xCD, KB, 28.8, No Display $1395

5400/180 16/1.2GB, CD, KB, 15" Display $1295

Star Color Printer

Free w/Sys. Purchase over $2000

Displays & Printers

Apple 14"/15"/15"AV	$289/349/425
Apple 1705/1710/1710AV	$645/779/845
Apple 20 20" Color Trinitron	$1499
radius MultiView 21" 0.28dpi	$1375
radius PrecisionView 21" 0.25dpi	$1595
radius PressView 21SR	$2295
Color LaserWriter 12/600 PS	$4,895
LaserWriter 12/640 4/600*	$1,349/499*
StyleWriter 2500*/2500/2200	$199*/279/289
StyleWriter 1500/1200*	$199/125

PowerBooks

3400c/240	16-3GB, 12xCD, 33.6	$5295
3400c/180	16-1.3GB, 12xCD, 33.6	$3745
1400c/133	16-1GB, 6xCD	$2495
1400c/117	16-1GB, 6xCD	$2295
1400cs/117	16-750, 6xCD	$1795
1400cs/117	12-750	$1525
5300ce/117	32-1.1GB	CALL
DUO 280 & 250	8-240	$695/495
DUO 2300C	40-2.1GB	$1795
DUO 2300C	8-750	$1185

PB. 3400c/200 MHz

32/2.1GB, 12xCD, 33.6 $4245

PB. 1400cs/117 MHz

44/2.1GB $2175

Duo 2300C/100 MHz

*20/1.1GB $1445

STORAGE

Zip Drive SCSI /10 pack Crtrdg.	$139/109
Jaz Drive SCSI/5 pack Crtrdg.	$439/429
NOMAI 540MB SCSI Removable	$889
SyQuest SyJet 1.5GB SCSI Removable	$479
Quantum Tempest 2GB SCSI-II	$299
Quantum Atlas 2.1GB SCSI-II	$439
Quantum Atlas 4.5GB SCSI-II/III	$839/869
Quantum Atlas 9GB SCSI-II	$1379
Seagate Barracuda 4.3GB SCSI-II	$889
TOSHIBA 1.08/1.35GB IDE 2.5" f/PB.	$199/229
TOSHIBA 2.1/3.08GB IDE 2.5" f/PB.	$349/229

Printers & Scanners

HEWLETT PACKARD

Color LaserJet 5M/LaserJet 5SIMX	$5549/3295
LaserJet 4MV/5M/6MP	$1995/1499/799
DeskJet 1600CM	$1399
DeskJet 870CXi /855CXi	$449/335
ScanJet 5C/5P/4C	$CALL/435/725

AGFA

SnapScan 24bit color	$289
StudioScan IIsi	$479
StudioStar	$779
Arcus II	$1475
DuoScan	$4495

Nikon

Coolscan II LS20E	$1159
Super Coolscan LS1000	$1679
Auto Slide Feeder	$549

Microtek

ScanMaker III 36bIT	$1349
ScanMaker E6	$339
ScanMaker E3	$159

UMAX Scanners

The Magic of Color

UC1200SE 30 bit color	$489
Astra 600S	$239
Vista S12	$489
PowerLook II	$1299
PowerLook 2000	$3295

SOFTWARE

at Unbeatable Prices!

Adobe	Photoshop 4.0/Illustrator 6.01	$349/239
	PageMaker 6.5/Acrobat 3.0	$299/139
	Premiere 4.2/Persuation 4.0	$395/199
	After Effects 3.0/StreamLine 4.0	$429/109
Quark	QuarkXpress 3.3/3.32	$499/629
MetaTools	Bryce2.0/Kai's PowerTools 3.0	$149/119
Macromedia	Freehand 7.0/Design Studio	$239/839
Fractal Design	Painter 5.0/Detailer	$269/239
Microsoft	MS Office 4.2.1	$279
	MS Excel /MS Word 6.01	$169/149

UMAX SuperMac Mac OS MOTOROLA StarMax

Systems in stock. (Best prices!)

SUPERMAC

S900L $2095

604 PPC Processor 150MHz, 16MB RAM, 1GB HD, 8xCD-ROM, IMS Twin Turbo w/4MB VRAM

Graphic Tablets

WACOM

ArtPad II 4x5	$129
ArtZ II 6x8*/12x12*	$195/299
ArtZ II 12x18*/UD 12x12	$399/239

Video & Graphic Cards

IMS

Turbo TV	$145
Twin Turbo 128M4	$289
Twin Turbo 128M8	$599

Number Nine Imagine 128 w/8MB $579

TRUEVISION First in Digital Video

Targa 1000 PCI	$1295
Targa 2000 PCI	$2649

radius VideoVision NuBus $595

PCI Graphic Cards

ThunderPower 30/1920 1920x1080 Res.	$1,099
PrecisionColor 8/1600 1600x1200 Res.	$229
LeMans GT/Spigot II Tape	$395/149

COMPAQ TOSHIBA IBM TEXAS INSTRUMENTS AST COMPUTER

PC's

Desktop & Laptops in Stock ! (Call for Best Prices!)

CIRCLE 434 ON READER SERVICE CARD

BaseOne Computers

MacBase / PcBase Since 1988 215 E. Baker St Costa Mesa, CA 92626

(800)943-1211

FAX (714)428-0778 Int'l (714) 428-0777

HOURS : M-F 8-6 PST
SAT 10-2:00 PM PST

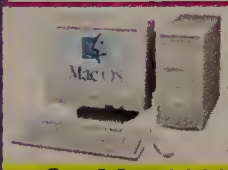
Web: http://www.macbase.com

UNIVERSITY, SCHOOL, GOVERNMENT, & FORTUNE 1000 P.Os ACCEPTED

CUSTOM CONFIG. AVAILABLE | BUSINESS LEASING AVAILABLE | CALL US FOR CURRENT PRICING

We also carry : COMPAQ TOSHIBA IBM

MOTOROLA StarMax



PowerPC 603e™ or 604e at 180 or 200MHz, a min.of 16 or 32MB standard memory, and a 256K or 512K Level 2 cache . Every Motorola StarMax 3000 comes pre-loaded with the same Mac OS you know and rely on. 8X speed CD-ROM, 5-year limited warranty • Popular software and CD titles included •more

StarMax 3000 series

DT/180 16/1.2GB/8xCD	$1279
MT/180 32/2.5GB/8xCD	$1429
MT/180 32/2.5G/CD/6S	$1459
DT/200 16/1.2GB/8xCD	$1499
MT/200 32/2.5GB/8xCD	$1699
MT/200 32/2.5G/CD/6	$1759
MT/240 32/2.5GB/8xCD	$2189
MT/240 32/2.5G/CD/6S	$2189

StarMax 4000 series

DT/160 16/1.2GB/8xCD	$1499
MT/160 32/2.5G/CD/6S	$1859
DT/200 16/1.2GB/8xCD	$2139
MT/200 32/2.5GB/8xCD	$2299
MT/200 32/2.5G/CD/6S	$2679

StarMax 5000 series

MT/300 32/4.3GB/16xCD/512K L2/IMS Twin Turbo / 7.6 O/S & Bundle Software $2859

UMAX Computer Corporation

SUPERmac

S900L/250 32/2.1GB/CD/IMS	$4499
S900L/233 32/2.1GB/CD/IMS	$3889
S900L/225 32/2.1GB/CD/IMS	$3459
S900L/200 32/2.1GB/CD/IMS	$3059
S900L/180 32/2.1GB/CD/IMS	$2899
J700L/180 24/2.1GB/CD	$2329
C500/180 16/1.2GB/CD	$1099
C600/200 16/1.2GB/CD	$1599
C600/240 16/1.2GB/CD	$1989

Apple Power Macintosh

180Mhz 16/2GB/12xCD/L2/KB

• Power Mac 7300
• PowerPC™ 604 running at 180 Mhz• Three PCI slots
• Built in Video & Ethernet• 12x CD ROM • Includes keyboard

Mon. sold separately

$1889

4400/200 16/2GB/8xCD/KB	$1489
4400/200 Small Business Bundle	$1859
6500/225 32/3G/12xCD/KB/Bun.	$1859
6500/250 32/4GB/12xCD/KB/Home	$2099
6500/300 64/4GB/12xCD/KB	CALL
7200/120 16/1.2GB/8xCD	$1099
7300/180 32/2GB/12xCD/KB/Zip	$2199
7300/200 32/2GB/12xCD/KB	$2379
7600/132 16/1.2GB/CD/Ref	$1579

6500 Business Bundle

250Mhz 48/4GB/12xCD/L2/KB

• Power Mac 6500
• PowerPC™ 603e running at 250 Mhz• • 33.6bps Fax modem
• Apple business bundle software including MS Office • Zip Drive, & More

$2439

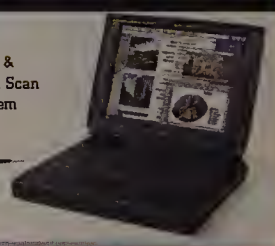
8600/200 32/2Gb/12xCD/KB/Zip	$2998
9600/200 32/4Gb/12xCD/KB	$3389
9600/180 MP 32/2Gb/CD/VI	$2849
9600/200 MP 32/4Gb/12xCD/KB	$4289

EZ QUESTJAZ 1GB W/CART $359 NEW !

Apple PowerBook Series

1400cs 16/750/6x CD

• PowerPC™ 603e running at 117Mhz • 16 MB of RAM & expandable • Two Type II PCMCIA or one Type III • Dual Scan Passive Matrix display • 75 MB HD • Optional Fax Modem



$1889

1400cs/117 12/750HD	$1498
1400c/133 16/1.0GB/6X CD	$2799
3400c/180 16/1GB/L2	$3989
3400c/180 16/1GB/6X CD/L2	$4259
3400c/200 16/1GB/6X CD/L2	$4949
3400c/240 16/2GB/6X CD/L2	$5899
Battery for 3400c	$249
US Robotics 28.8 PC	$249

Duo 2300c

20/1.1/M/REF $1398

Performa Series

Performa 6360 16/1.2GB/CD NEW !

$1099

Mon. not included

6200CD 8/1.2GB/CD/Ref	$799
6220CD 16/1.0GB/CD	$849
6218CD 16/1GB/CD/15*	$1159
5260 16/800/CD/15"	$1099
6400/180 16/1.6GB/CD	$1399
6400/200 16/2.4GB/CD	$1499
6400/200 Video Edition	$1995

Apple Workgroup Server

7250/120 16/2GB/8xCD/A.S	$2495
7250/120 16/2GB/8xCD/Inter.	$2099

Monitors

Apple Multiple Vision 1705

* 0.28-mm aperture grille pitch* Upto 1,024 by 768 at 75 Hz •* 17-in. diagonal 15.8-in. diagonal viewable image

$599

MultipleScan 15AV	$429
Multiple Scan 20"	$1549
Multiple Vision1710	$749
Multiple Vision1710av	$849

SONY

MultiScan 100SX	$389
MultiScan 200SX 17	$669
MultiScan 200SF 17	$759
MultiScan 20SE2T	$1629
NEC C400 14"	$289
NEC C500 15"	$369
NEC M500 15"	$399
NEC M700 17"	$779
NEC 21XE 21"	$1499

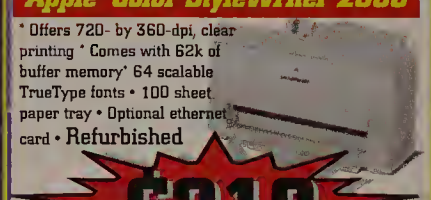
NEW!

Apple Refurb. 15" MultipleScan $299

Printers

Apple Color StyleWriter 2500

* Offers 720- by 360-dpi, clear printing * Comes with 62k of buffer memory* 64 scalable TrueType fonts • 100 sheet paper tray • Optional ethernet card • Refurbished



$219

APPLE

Apple Color Printer	$369
2500	$329
LW 12/640/Duplex	$1969
LW 16/600	$2059
Color LW 12/660	$5448

HEWLETT PACKARD

HP 4MV	$2549
HP 6MP	$869
HP 5M	$1679
HP 5SIMX	$3699

MEMORY

Free FedEx Two Day Shipping*

8MB DIMM	$65
16MB DIMM	$95
32MB DIMM	$198
64MB DIMM	$339
256K/512K L2 DIMM CACHE	$59/$119
1MB V-RAM	$49
4MB / 8MB SIMM	$40/$55
16MB SIMM	$99
32MB SIMM	$159
24MB PB 1400c	$199
32MB/48MB PB 1400c	$289/$389
64MB PB 1400	CALL
16MB PB 3400	$189
32MB PB 3400	$299
48MB PB 3400	$399
64MB PB 3400	$499

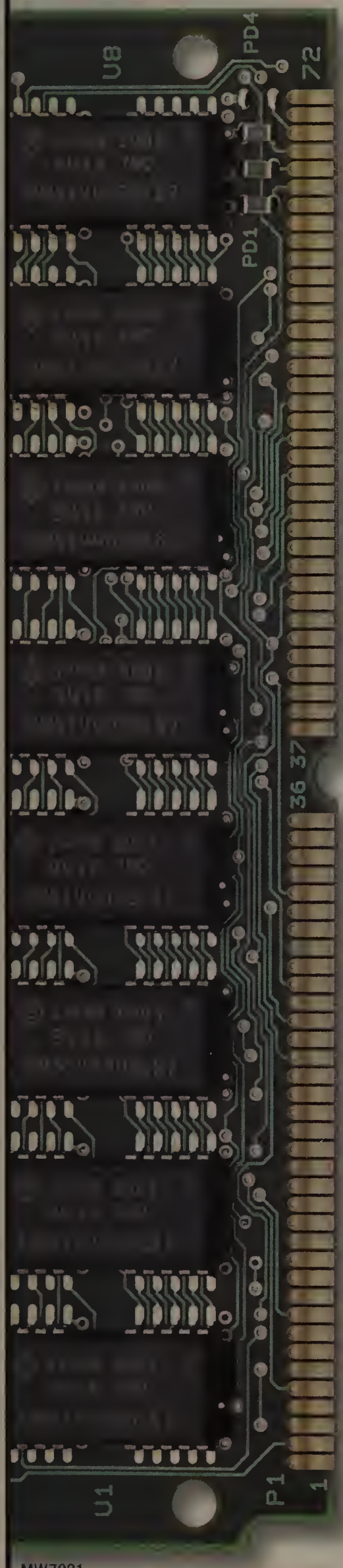
*Only For Memory products purchased

Specials Limited Supply

Apple 2GB HARD DRIVE	$349
Apple Power Mac AV card/6100	$129
Apple DOS Compatible for/6100	$129
Apple 150 Mhz Processor Card	$429
Kensington Turbo Mouse	$99
Apple CE 600e CD ROM refurb.	$179

Dealers inquiry welcome. returned products are subject to a restocking fee. Prices reflect C.O.D or cash & subject to change w/o notice . * P.Os are subject to credit approval .

CIRCLE 443 ON READER SERVICE CARD



WHEN IT COMES TO MEMORY, WE KEEP PROMISES OUR COMPETITION CAN'T MAKE.

Call us today for the highest quality memory products, fast delivery and the industry's best pricing. Our 10-year reputation for exceptional service has made Peripheral Enhancements Corporation a leading supplier of MAC and PC memory products to businesses, resellers, and institutions worldwide.

WE PROMISE AND DELIVER–

- U.S manufactured memory products that are individually designed to the precise specifications of Original Equipment Manufacturers, then double-tested to insure perfect performance.
- Overnight "just-in-time" shipments, in most cases from our huge inventory of memory products.
- Lifetime replacement warranty on every memory product we sell.
- Immediate price quotes via worldwide toll-free numbers.
- Outstanding installation assistance and technical support.
- Design, engineering and quickstart manufacturing of custom memory components.

Call today. Memory tomorrow.

800/259-6565

PERIPHERAL ENHANCEMENTS CORPORATION
327 East 14th, PO Box 2329 Ada, Oklahoma 74820
405/332-6581 FAX 405/436-2245
sales@peripheral.com • www.peripheral.com
HOURS: Monday-Thursday 6AM-7PM, Friday 6AM-6PM CST
An INC. 500 Company

MW7021

CIRCLE 454 ON READER SERVICE CARD

1•800•553•4230

Call Mac Xtra Now!

Fax • 206•746•5324 International• 206•746•3803

168-Pin DIMMs

For PM 9500,8500,7500,7200

8MB - - - - - $55
16MB - - - - - 90
32MB- - - - - 199
64MB- - - - - 390

72-Pin SIMMs

For Q 605/650,610,650, 700,800-840AV, LCIII/475/630,PERF.450-580/575 / 6115CD, PMAC 61/71/8100 W950/60/95/6150/81/8150

4MB 70NS/60NS - $28/30
8MB 70NS/60NS - 48/50
16MB 70NS/60NS - 99/102
32MB 60NS - - - - - 195

PC SIMMS

4MB 70NS/EDO - - $40/40
8MB 70NS/EDO - - 57/45
16MB 70NS/EDO - - 114/94
32MB 70NS/EDO- - 228/199

http://www.macxtra.com

EDO DIMMs

new!

3.3volt
for PowerMac 4400 & Starmax

64MB - - - - - - $399
32MB - - - - - - 210
16MB - - - - - - 101
8MB - - - - - - - 65

5volt
for Power Computing PowerBase system

64MB - - - - - - $405
32MB - - - - - - - 195
16MB - - - - - - - 90
8MB - - - - - - - 60

PLEASE CALL US FOR ALL YOUR MEMORY NEEDS!

Powerbook Series

PB 3400 Series

8MB - $65 16MB - $120
24MB-180 32MB - 320
48MB-393 64MB - 519
128MB-1356

PB 500 Series

4MB - $68 8MB - $75
12MB- 115 16MB -224

PB 5300 Series

8MB - $65 16MB - $115
12MB - 107 48MB - 339
32MB -215

PB 2300 Series

4MB - $58 8MB - - $95
16MB -120 32MB- 247
36MB-286

PBDUO Series

8MB - $75 12MB - $105
20MB- 179 28MB - 219

PB Accessories

Nupowr 200 MhzCPU - $645 (Powerbook 1400)
Nupowr 167Mhz 8MB - 730
Nupowr 167Mhz 0MB - 636
VST PB5300 Bat/Chrgr - 329
Int. Battery pk 140/180- -59
Battery PBDuo210,2300c 115
VST PB1400 A/C Adptr - 42

Accelerators

Newer Technology
Maxpower 200MHz 7500/8500/9500 $1015
Maxpower 360MHz Dual Processor 1581
Maxpower 400MHz Dual Processor 1787

Modems

•GLOBAL VILLAGE•
Teleport Plat. 33.6 V.34 --- $175
Powerport Plat. PC Card 33.6 - 349
Powerport Plat. PC Card Pro - 519

•SUPRA•
Express 33.6 EXT V.34 ---- $149
33.6 V.34 Fax Modem ----- 199
Supersonic 33.6 V.34 W/voice - 275
Supra 33.6 EXT V.34s/r fax -- 149

•MOTOROLA•
ISDN Bitsurfer Pro ------ $365

•US ROBOTICS•
33.6 V.34 Internet Bundle -- $175
33.6 Sportster Ext W/Voice - 205
33.6 Sportster V.34PC card - 215

Media

•IOMEGA•
ZIP 100 Single ------- $19
ZIP 100 3-Pack ------- 49.50
ZIP 100 10-Pack ------ 139
JAZ 540MB Single ----- 69
JAZ 540MB 5-Pack ----- 294
JAZ 1GB Single ------ 123
JAZ 1GB 5-Pack ------ 479

•SYQUEST•
EZ FLYER 230MB Cart. -- $29.50
SYJET 1.3GB Cart. ----- 108
SYJET 1.3GB 3/PK Cart. --- 278
SYJET 1.3GB 5-PK Cart. --- 452

•SONY•
MO 128MB 3-Pack ------ $44
128MB Format 3-Pack ---- 50
MO 230MB 3-Pack ---- 55
230MB Format 3-Pack ---- 60
DDS 4MM 2GB Data ---- 8
DDS 4MM 4GB Data ---- 23

•VERBATIM•
128MB 3.5 MO Disk ------- $16
230MB MO Disk ---------- 20
600MB/512K MO Disk ------ 51
650MB/1024K MO Disk ------ 51
1.2GB/512K MO Disk ------ 60
1.3GB/1024K MO Disk ------ 60
DATA 4MM DC 187 FT ----- 6.50
DATA 4MM DC 295 FT ----- 7.50
DATA 8MM DC 367 FT ----- 6.50
CDR 74MIN 640MB REC 10-PAK - 83

VRAM

256K 80NS V RAM ----- $15
512K VRAM --------- 20
1MB V RAM (DIMM) ----- 45
2MB V RAM (DIMM) ----- 79
1MB V Ram PM4400 ----- 79
2MB V Ram PM4400 ----- 125

FPU's

FPU'S/MATH/COPROCESSOR
CENTRIS FPU 25MHZ ---- $186
FPU 33MHZ DUO/P600 --- 51
FPU Color Classic 16MHZ --- 48
LC575 33MHZ FPU ----- 238
LC FPU 16MHZ ------- 49
LCIII FPU 16MHZ ------- 49

Cache

256K Cache 61/71/8100 --- $45
256K DIMM Cache ------ 64
512K DIMM Cache ------ 139
256K Cache PM4400 ----- 149
512K Cache PM4400 ----- 235

Drives

•APPLE DRIVES•
1.2GB Drive ---------- $467
2GB/4GB Drive ------ 765/1089

•QUANTUM•
1.2GB Int/Ext Drives --- $323/399
2.1GB Int/Ext Drives ----- 389/479
4.3GB Int Drive ------- 1127
4.3GB Ext Drive ------- 1225

•MICROTECH•
PB150/190/5300 1GB IDE Drive - $445
PB150/190/5300 2GB IDE Drive - 779
500MB INT SCSI2 2.5LP 11MS Drive 559
500MB INT SCSI2 2.5LP 11MS Drive 699

•IOMEGA•
Zip 100 Drive W/Ctg. ------ $189
Jaz 1GB Drive w/Cart. ------ 499

•SYQUEST•
EZ FLYER 230 Drive ----- $295
SYJET 1.3GB Drive ------ 495

•Mac Xtra•

Prices subject to change without notice.
Office Hours: M-F, 7am to 6pm; Sat., 9am to 4pm

Overnight Del. $7.50 and UPS ground $6 & up
Returns subject to approval & restocking fee
We accept P.O.'s from fortune 500 & educational institutions

Mac Xtra • 1075 Bellevue Way NE, Ste. 114, Bellevue, WA 98004
Phone (206) • 746-3803 • Fax (206) • 746-5324

CIRCLE 561 ON READER SERVICE CARD

Run Your Mac Faster & Save!

Accelerate Mac LC, LC II, Color Classic, IIci, IIsi, IIvx, or Performa 600 to '040 Speed Starting at $199

Sonnet Presto™ LC 040 50/25 MHz accelerators increase Mac LC, LC II, or Color Classic performance 470% as fast as a stock machine (processor performance, MacBench2). Use RAMDoubler or Virtual Memory to break the 10MB barrier with the Presto LC (except Mac LC, OS 7.1+req'd). The Presto LC is only $199, or with a hardware Floating Point Unit (FPU), only $249.

The 80/40MHz version for the Mac IIsi*, IIci, IIvx, or Performa 600 increases processor performance by 250-500%. The 80/40 MHz Presto is only $299, or with FPU and 128K level 2 cache, $399.

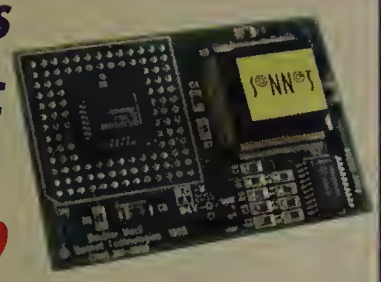
All Prestos are 100% application software compatible and run through System 7.6. The Prestos are easy to install in the Macs' processor direct slot, and come with clear installation instructions. (*Adapter req'd for IIsi)

Upgrade Your PowerBook 520/540 to 100MHz 603e with 8MB Memory for $399*

This is the genuine Apple Computer upgrade designed to bring your trusted PowerBook 520/540 into the PowerPC generation with a speedy 100MHz 603e PowerPC processor. With this upgrade you can run all native PowerPC applications. Upgrade your reliable ethernet-equipped PowerBook to PowerPC, and prepare for the MacOS future. The upgrade includes 8MB of memory and is compatible with your existing RAM expansion board.

*Price after a $100 discount for trade-in of existing 68LC040 card.

Allegro's Fast 68030s Give New Life to Mac SE, II, IIx, LC, LC II, Color Classic from $99

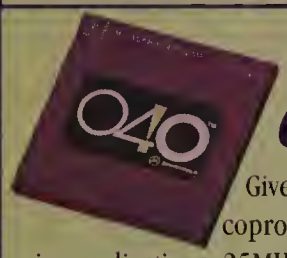


Give your older Mac more muscle. Sonnet Allegros™ are packed with features at bargain prices. The 33MHz Allegro LC for the Mac LC, LC II, Color Classic doubles your cpu speed, adds 16K level 2 cache and includes an FPU–all for only $149. The 33MHz Allegro SE increases performance 460%, includes an FPU and 4 SIMM slots to expand memory up to 16MB for a bargain $199. Allegro Mac II, IIx models double '030 speed to 33MHz for a mere $99.

Run the Fastest Quadra Ever! 100/50 MHz is Faster than 840AV

Only $399

Plug the Sonnet QuadDoubler™ into a Quadra 610, 660AV, 700, 900, or Centris 610*, 660AV, 650 and run virtually twice as fast as before for only $399. No software upgrades or changes are required. Just plug the QuadDoubler into your CPU socket and power up your Mac. A CPU extraction tool is even included to simplify installation. The QuadDoubler includes a Floating Point Unit for superfast rendering or calculations. A cache card is also available for the Quadra 700/900 for even more performance. *The Centris 610 QuadDoubler runs at 80/40 MHz and is value-priced at $299 (without FPU $199).



Add Math Coprocessor to 68040 Macs & PowerBooks

Give your Quadra, Centris, or PowerBook 520/540 a math coprocessor for rendering, Photoshop, CAD, or other Math intensive applications. 25MHz 68040 $125*, 33MHz 68040 with heat sink $169*. Add a full 66/33MHz 68040 with FPU to your PowerBook 520 or 540 for $199*. This also speeds 520 to 66/33MHz. Call for PB190, Duo280 FPU. *68LC040 trade-in req'd.

7300-9600 Upgrade

150MHz 604 $299*
200MHz 604e $749*
233MHz 604e $1099*

Give your Power Mac 7300, 7500, 7600, 8500, 8600, 9500, 9600 a PowerPC 604/604e upgrade. These power-packed upgrades are 100% compatible with your existing software and hardware. Just plug one in and enjoy the productivity you deserve. Add 1MB cache & double performance.*with card trade-in.

Wow! 100BaseTx PCI Ethernet....Only $99

IMS Twin Turbo

Accelerate graphics 270% in a PCI Power Mac with the fastest video accelerator, the same as Apple bundles with the 9600. Scroll faster. Increase the speed, color depth and resolution on your big monitor. With 4/8MB VRAM .....$349/$549

Cache Doubles Speed?

True. An Apple PowerMac with 1MB cache runs 195% as fast as cacheless on 200MHz 604e (MacBench 4).256/512K cache boosts 138/169% respectively.

256K for 6100/7100/7200/7500 .....$49
512K for 72/73/75/76/85/8600.....$99
1M for 72/73/75/7600/85/8600....$199
256K 5260/6360/54/55/64/6500 ...$99
512K 5260/6360/54/55/64/6500 .$149

MasterCard

SONNET™ SONNET TECHNOLOGIES, INC.
18004 Sky Park Circle, Irvine, California 92614
714-261-2800 Fax 261-2461 sales@sonnettech.com

800-786-6260
http://www.sonnettech.com

VISA

VISA and MasterCard no surcharge. We used to have a surcharge; we don't anymore. Government, corporate and education P.O.s welcome. Tommy works diligently to process every in-stock order within 24 hours. You can wish her the best for her upcoming July wedding if you need to check an order status. One year limited warranty on all products. If you step on it and break it we limit the warranty, otherwise we don't limit it too much. All returns require an authorization and are subject to a restocking fee. ©1997 Sonnet Technologies, Inc. Sonnet, the Sonnet Logo, Allegro, Presto and QuadDoubler are trademarks of Sonnet Technologies.

CIRCLE 463 ON READER SERVICE CARD

A&R COMPUTING 603 West 13th Street #L-H Austin, TX 78701

memory

1-800-832-8802

CALL FOR CURRENT BEST PRICES

lifetime warranty!

SIMMs
DIMMs
PWRBK

TOP quality!

all items are new!

OUR PRICES ARE THE BEST, NO MATTER WHAT'S BEEN ADVERTISED IN THIS MAGAZINE!

shipping from $4

www.anrweb.com

VISA • Mastercard • Discover • Prepay

NO SURCHARGE FOR CREDIT CARDS

CIRCLE 411 ON READER SERVICE CARD

MEMORY

TECHNOLOGIES TEXAS

www.memory-tech.com

Complete price list on our WebSite!

High Quality • Lifetime Warranty • 2k Refresh

DIMMS	SIMMS
32Mb $175	16Mb $ 85
64Mb $330	32Mb $179

3.3V EDO DIMMS	5V
32Mb $183	32Mb $185
64Mb $349	64Mb $349

PowerBooks

3400-24Mb $179	1400-24Mb $175
190-24Mb $179	5300-24Mb $179

Call For Latest Pricing

info@memory-tech.com Fax: 512/457-1133

We accept MasterCard, Visa, American Express, & Discover

800•950•8411

CIRCLE 414 ON READER SERVICE CARD

MEMORY

Quantity Discounts Available

BEST PRICES!

Computer Reseller/Dealer Hotline 800-873-3726

168 Pin DIMMs		PBook 5/53/14/3400		Storage Specials	
8mb	$ 40	8mb	$ 75	Quantum 1.2 gb	$ 225
16mb	$ 79	16mb	$ 122	Quantum 3.2 gb	$ 365
32mb	$ 168	24mb	$ 180	Iomega Zip Drive	$ 145
64mb	$ 325	32mb	$ 230	Jaz 5 pack	$ 425

72 Pin SIMMs		30 Pin SIMMs		Cache/VRAM		
4mb	$ 20	1mb	$ 10	61/71/81	256k	$ 20
8mb	$ 38	2mb	$ 17	64/54	256k	$ 80
16mb	$ 79	4mb	$ 24	72/76/85	512k	$ 90
32mb	$ 164	16mb	$ 95	1 mb	VRAM	$ 27

All prices are subject to change. Limited to stock on hand. #414

WE BUY, SELL & TRADE MACS! CALL (800)80-WE-BUY

1416 Wilshire, Santa Monica, CA 90403

Tel: (310) 394-0001 Fax: (310) 394-7744

visit our web site! http://www.macsolutions.com

Dealer Inquiries Invited — Call 800-873-3726

University & School P.O.'s Welcome

VISA-MasterCard-AMEX no surcharge

MAC Solutions

(800)809-3289

CIRCLE 410 ON READER SERVICE CARD

MEMORY BLOWOUT

All New Chips!

Prices Change Daily Call for Today's Deal !!

Low Price Guarantee: We will BEAT anyone's valid advertised price in this issue by 2 percent !!* Call us LAST

SIMM-72 4M $19.00 8M $39.00 60 nsec

Call for PowerBook Memory!!

Call for -70 -80 nsec

Lifetime Warranty!

SIMM-72 16M $77 32M $154 60 nsec

NO Credit Card Surcharge

DIMM-168 8M $45.00 16M $82.00 60 nsec

Call for EDO

DIMM-168 32M $165 64M $319 60 nsec

Gold Plated DIMM's

Call for VRAM/Cache

Prices subject to change w/o notice. Call for updates. *Offer good for comparable modules in stock. Other restrictions & exceptions apply.

Shadow Technologies

(800) 4-SHADOW

(800) 474-2369

M-F 9-6 PST Sat 10-2

Gov, Edu, & Corp. P. O.'s OK with Approved Credit

Addr. verification used to prevent credit card fraud

VISA

Magic MAC *Quality Solutions! Best Prices!*

MAGIC MEMORY

Simms — 32-Bit 72pin Simms

4MB	1X32	60ns	$19
8MB	2X32	60ns	$39
16MB	4X32	60ns	$79
32MB	8X32	60ns	$154
64MB	16X32	60ns	$384

Cache — PowerPC PWM, Perf.

Cache 4400,6400	$89
512K Cache 4400,6400	$109
256K 7xxx, Bxxx PCI	$46
512K 7xxx, Bxxx PCI	$96

Newer

MaxPower 180MHz	$829
MaxPower 200MHz	$894
MaxPower 225MHz	$999
MaxPower 360MHz	$1394
MaxPower 400MHz	$1594

Dimms — 64-Bit 168pin Dimms

8MB	1X64 Dimm	$39
16MB	2X64 Dimm	$79
32MB	4X64 Dimm	$164
64MB	8X64 Dimm	$339
128MB	16X64 Dimm	$1089

$164 32MB Dimm

Vram

256K Vram	$14
512K Vram	$24
1MB Vram 7xxx, Bxxx PCI	$28
2MB Vram for ATI	$84
2MB Vram for 4400	$69
4MB Vram for 4400	$138

MAGIC STORAGE SOLUTIONS

Disk

Quantum	1.2GB FB TP	$264
	2.1GB FB TP	$304
	3.2GB FB TP	$389
Seagate	2.1GB B4 Bms	$474
	4.3GB B4 Bms	$989

CD&CD-R

MagicMac 12X Speed	$228
MagicMac 8X Speed	$178

$839 Yamaha 4X/6X CDR

Includes CD Toast sofware

PowerMac

PowerMac 7300/180 MHz

180 MHz 604 • 16MB HD • 16MB Ram • 12x CD • Keyboard & Mouse

$1999

All other systems, Call

Removable

Iomega	Zip 100MB	$139
Syquest	Syjet 1.5GB	$479
	Ez Flyer 230MB	$259
Nomai	540MB	$249

Jaz 1GB Drive External $449

Media

Syquest	44/88	$39/$49
	200/270	$69/$59
	135/230	$29/$39
	Syjet 1.5GB	$106
Nomai	540MB	$59
Iomega	Jaz/Zip	$86/$15

(888) 910-0900

(714) 988-1979 Ph. (714) 988-9889 Fx.

PRICINGUE SUBJECT TO CHANGE WITHOUT NOTICE

Magic MAC ALL MAJOR CREDIT CARDS ACCEPTED

LeMac 800•671•3686

4040 Quaker Bridge Rd. • Mercerville, NJ 08619

The Mac Experts!

Dimms	Simms
2k•168pin 60ns	2k•72pin 60ns
8mb $55	8mb $49
16mb $90	16mb $89
32mb $185	32mb $179

Iomega 100zip $149

Call For H/D Pricing

Cannon PowerShot 600 $899

Olympus D200L $649 D300L $899

Kodak DC25 $500 DC50 Zoom $899

Macintosh Repairs & Upgrades

- Digital Camera & Imaging Experts
- Digital Camera Sales & Service
- All Mac Repairs
- Memory Upgrades
- CPU Upgrades
- H/D Upgrades
- Photo Quality Printers
- Scanning Services (Neg. & Photo, up to 3600dpi)
- Buy-Sell-Trade Mac Computers & Printers

CIRCLE 422 ON READER SERVICE CARD

CALL FOR THE BEST PRICES

POWERMAC, PERFORMA & POWERBOOK MACINTOSH SYSTEMS

componex@componex.com

http://www.componex.com

MEMORY

SIMMS: 30-PIN, 72-PIN, 1-32MB

DIMMS: 168-PIN, 4-128MB

CACHE: 256K, 512K, L2

VRAM: 1MB, 2MB

16 MB DIMM, 60NS, 2K $77

32 MB DIMM, 60NS, 2K $159

64 MB DIMM, 60NS, 2K $305

9008 Wilshire Blvd., Beverly Hills, CA 90211

COMPONEX

1.800.444.6969

Tel: 310.385.9100

Fax: 310.385.9111

CIRCLE 421 ON READER SERVICE CARD

THE LLB COMPANY, INC.

1-800-840-2212

International: 206.746.0229
Web Site: http://www.llb.com
email:sales@llb.com
Fax: 206.746.5168

Established 1990

DIMMS

168-pin

128MB 70NS	$1232
64MB 60NS	345
32MB 60NS	181
16MB/8MB 60NS	95/55

MEMORY

DIMMS EDO 5VOLT

POWERBASE

64MB 60NS	$405
32MB 60NS	197
16MB/8MB 60NS	105/55

5% OFF

ANY MEMORY PURCHASED WITH SYSTEM

72-PIN SIMMS

32MB 60NS	$172
16MB 70/60NS	95/97
8MB 70/60NS	45/47
4MB 70/60NS	24/26

30-PIN SIMMS

16MB 70NS	$134
8MB 70NS	81
4MB 70NS	28
2MB 70NS	18

DIMMS EDO 3VOLT

STARMAX/PM4400

64MB 60NS	$419
32MB 60NS	210
16MB/8MB 60NS	105/59

POWERBOOK CORNER

48MB	$395
36MB	268
32MB	247
20MB	175
16MB	119
8MB	51

128MB	$1365
96MB	935
64MB	535
32MB	219
24MB/16MB	170/120

32MB	$224
16MB	107
8MB	68
4MB	62

28MB	$234	32MB	$233
20MB	170	16MB	120
14MB	125	12MB	108
8MB	70	8MB	70
		4MB	55

48MB	$339
32MB	224
16MB	120
8MB	65

24MB	$199
16MB	139
8MB	77

Drives/Media

LACIE

Quantum 1.2GB Int/Ext Drives	$275/356
Quantum 2.1GB Int/Ext Drives	356/440
Atlas 4.3GB Int/Ext Drives	958/799
Quantum 9BG Int/Ext Drives	1887/1982

IOMEGA

JAZ 1GB 3.5 Ext SCSI Drive	$499
JAZ 1GB Cartrige (5 Pack)	$479

UMAX Systems

Supermac S900 L250 Tower	$4735
Supermac S900 L233 Tower	4125
Supermac J700 180MHz Desktop	2415
Supermac C600 200MHz Minitower	1645

Zip Drive

with cartridge

$149

iomega

ZIP Cartridges 10PK $139

Printers & Scanners

HEWLETT PACKARD

4MV 16PPM 600 DPI Laser	$2840
6MP 8PPM 600 DPI Laser	955

APPLE

Color Laser Writer 12/600	$6465
Laserwriter 16/600	2249

UMAX

Mirage Engine	$5469
Powerlook II Engine	1505
Powerlook 2000 Engine	2976
Vista S-12 SOHO Bundle	477

EPSON

Stylus 600 Inkjet	$310
Stylus 800 Inkjet	466
Stylus Color Pro XL	1799

Verbatim CDR

74 min 640MB

10-pack

$62

Modems

USRobotics

Sportster 33.6 V.34 Internet Bndl	$175
Sportster 56k Fax modem	215

Supra

#5033FX 33.6 V.34 Fax Modem	199
#5033XP 33.6 V.34 Fax Modem	127

MOTOROLA

Authorized Reseller

MINI TOWERS

Monitor Sold Separately $1446

Starmax 3000/180 w/28.8 Modem

- Motorola w/PowerPC 603e Processor
- 180MHz Speed
- 32MB RAM expandable to 160MB
- 256k L2 Cache
- 1MB V-RAM expandable to 4MB
- 2.5GB Hard Drive
- 8X Internal CD-Rom Drive
- Motorola 28.8 Data/fax Modem

Starmax 3000/200 w/28.8 modem $1726

Starmax 4000/160 $1740

Starmax 3000/240 w/28.8 modem $2200

Starmax 4000/200 $2426

DESKTOPS

Monitor Sold Separately $1299

Starmax 3000/180 w/28.8 Modem

- Desktop w/PowerPC 603e Processor
- 180MHz Speed
- 16MB RAM expandable to 160MB
- 256k L2 Cache
- 1MB V-RAM expandable to 4MB
- 1.2GB Hard Drive
- 8X Internal CD-Rom Drive
- Motorola 28.8 Data/fax Modem

Starmax 3000/200 w/28.8 modem $1526

Starmax 4000/160 $1545

Starmax 4000/200 $2225

Electronic Orders: E-Mail: sales@llb.com •Web Site: http://www.llb.com •PO's are accepted upon approval. •All major credit cards accepted & charged when order is shipped. •No surcharge on credit cards. •Prices subject to change, not responsible for errors. •We welcome International orders. •Orders received before 8:00pm EST weekdays shipped same day. •Open 6am to 7pm M-F 9am to 4pm Sat. PST •Returns subject to 15% restocking fee.
The LLB Co., Inc. •13228 NE 20th St., Suite. B, •Bellevue, WA 98005

CIRCLE 563 ON READER SERVICE CARD

OUR GOAL IS TO BEAT OUR COMPETITOR'S PRICES
CALL US LAST FOR A SPECIAL DISCOUNT!

MEMORY NEW DRIVES NEW

30 PINS SIMM
72 PINS SIMM
168 PINS DIMMS

NEW QUANTUM INT. & EXT. DRIVES NEW
IOMEGA ZIP & JAZ DRIVE ZIP & JAZ CART
FWB CD RECORD/WRITER
NEC MULTISPIN CD-ROM DRIVE

EDO SIMMS
EDO DIMMS

VIDEO RAM
CACHE CARD

POWERBOOK MEMORY
ALL SERIES AVAILABLE

PRINTER MEMORY
MAJOR BRANDS AVAILABLE

LIFETIME WARRANTY ON MEMORIES
ACCELERATORS

1-800-427-2021
HBR ENTERPRISES
11628 SANTA MONICA BLVD.#201 LA. CA. 90025
M-F 7:30AM - 6PM SAT 10AM - 3PM
FAX 1-310-826-2573
INTERNATION. 1-310-826-3363
TERMS:VISA, MC., AMX., DISCOVER, PRE-PAID, C.O.D & APPROVED P.O.s
http://www.hbrcomp.com
RETURN ITEMS ARE SUBJECT TO APPROVAL AND RESTOCKING FEE. PRICES SUBJECT TO CHANGE

CIRCLE 452 ON READER SERVICE CARD

MEMORY
Lifetime Warranty
1-888-808-6242

168 PIN DIMM
8/16MB ___ $45/89
32MB ___ $175
64MB ___ $335

72 PIN SIMM
4/8MB ___ $22/38
16MB ___ $85
32MB ___ $175

30 PIN SIMM
1/2MB ___ $9/19
4MB ___ $27
16MB ___ $105

VRAM
256K ___ $12
1MB VRAM ___ $34
2MB f/PM 9500 $90

PowerBook Memory

PB 1400
16/32/48MB ___ $145/255/359

PB 5300, 500 & 190
16/24MB ___ $135/185
32/48MB ___ $255/355

PB DUO Series
16/24MB ___ $139/195
36MB ___ $325

PB DUO 2300
16/32MB ___ $139/259
40/48MB ___ $315/375

CACHE
256K DIMM ___ $55
512K DIMM ___ $90
256K f/PM 6400 ___ $95

We Specialize in PowerBook Memory

eritech INTERNATIONAL, INC.
Phone:(818)244-6242 ❖ FAX:(818)500-7699
prices subject to change
Internet:http://www.eritech.com ❖ e-mail:eritech@sprynet.com
4551 San Fernando Road, Suite 110, Glendale, CA 91204

CIRCLE 469 ON READER SERVICE CARD

Kingston TECHNOLOGY
MEMORY
TECHWORKS
CENTON PNY ADVANTAGE MEMORY CORPORATION SOUTHLAND MICRO SYSTEMS Viking NewerRAM

POWERBOOK RAM
NEW 3400/1400/5300
500/190/2300 SAMSUNG
4MB.....$49
8MB.....$65
16MB.....$109
32MB.....$195
48 MB.....$339!
LIFETIME WARRANTY!

NEC L2 CACHE OKI
256k 61/71/81xx.....$1
1MB NEW 61/71/81.....$129
256k - 72/75/85.....$49
512k - 72/75/85.....$89
1MB NEW 72/75/85.....$159
256k - 54/64.....$95
512k - 54/64.....$149

MITSUBISHI VRAM MOTOROLA
256k.....$13
512k.....$21
1MB 72>85xx.....$29
2MB STARMAX.....$69
2MB ATI/9500.....$65

HIGHEST QUALITY! LOWEST PRICES! GUARANTEED!

SOURCE COMPUTING
800/900-4599
http://www.sourcecomp.com
Voice 954/725-9777 • Fax 954/725-9977
All products feature a 30 day money back guarantee. All memory products are brand new and carry a limited lifetime warranty. Government and educational PO's are welcome. No surcharges on credit cards. Order 24 Hours! Call for latest pricing as prices are subject to change without notice!

LIFETIME WARRANTY!

DISCOVER NOVUS VISA FedEx MasterCard American Express Cards

WE WILL BEAT ANY PRICE!

hp DIMMS FUJITSU
168pin • FPM/EDO/33v
8 MB.....$39/41/47
16 MB.....$79/81/87
32 MB.....$155/159/167
64 MB.....$309!/$1[illegible]/$149
LIFETIME WARRANTY!

SIMMS IBM
72pin • FPM/EDO
4 MB.....$19/21
8 MB.....$35/37
16 MB.....$75/77
32 MB.....$147/149!!

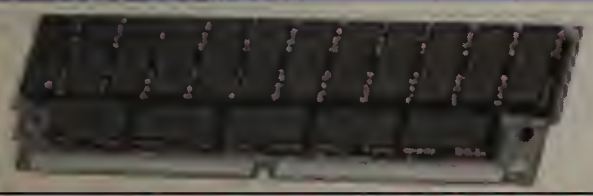
30 PIN SIMMS • 70/60ns
1MB.....$9
2MB.....$16
4MB.....$23
16 MB.....$9[illegible]!

CIRCLE 409 ON READER SERVICE CARD

MEMORY

LIFETIME GUARANTEE

PC & Mac Memory in stock at Lowest Prices



SIMMs / DIMMs / EDO / Printer / Notebook / DIPs/ SIPs / VRAM / Cache

Iomega ZIP & JAZ Drives

UMAX VISTA Color Scanners

FOCUS™ Connectivity Products

www.datamem.com..Updated Daily

DMS

Data Memory Systems, Inc.
24 Keewaydin Dr. Salem, NH 03079
Tel: 603-898-7750
Fax 603-898-6585
email-sales@datamem.com

800-662-7466

University,Government & Corporate P.O.s with Approved Credit

CIRCLE 447 ON READER SERVICE CARD

Want bargains online?
Bookmark the
Mac Shopper at:
Macworld ONLINE
www.macworld.com/buyers/shframed.htm
Advertise at (800) 888-8622

RAM SIMMS & DIMMS
•LIFETIME WARRANTY•
POWERBOOK MEMORY
INCLUDING PB3400
THE FINEST QUALITY WITH
THE BEST PRICE!
MONITORS • SOFTWARE
MODEMS • PRINTERS
ALL STORAGEDEVICES
1.800.844.8356
FIBER CANYON
http://www.fibercanyon.com

CIRCLE 416 ON READER SERVICE CARD

Active Buyers turn to the
Macworld SHOPPER
Over 590,000 Macworld subscribers turn to the Macworld Shopper monthly. 531,250 of these buyers have taken action as a result of seeing an ad in the Macworld Shopper.

WE SPECIALIZE IN
WHOLESALE WATERLESS COLOR PRINTING

1000 FULL COLOR BUSINESS CARDS FOR $100 Sug. retail price $179
1000 FULL COLOR POSTCARDS FOR $149 Sug. retail price $249

Ashley Lynn's
TANNING
REFERRAL CARD
3 Tans for $3
For new customers only. Photo ID req. Exp. 12/31/97.
Bellevue 293-7630 Millard 896-5870 Omaha 331-7795

Save Money! Upload Your Files to Our FTP Site at ftp.copycraft.com

- BUSINESS CARDS
- POSTCARDS
- CD INSERTS
- CD TRAY LINERS
- BROCHURES
- BOOKLETS
- NEWSLETTERS
- POSTERS & MORE

Kramer HANDGUN LEATHER™

FEATURING 300 LINE SCREEN WATERLESS OFFSET PRINTING

Output from your computer files at 300 line screen on Super Premium 10pt. Kromekote Stock with our FREE scratch resistant aqueous coating.

Rates for Brochures, Booklets and Flat Sheets are also available.

4-COLOR WATERLESS SPECIAL

1000 18"x24" POSTERS
Printed from your files on 100 lb. gloss text, 4-color, full bleed with FREE Aqueous Coating.
Get 2500 for only $1599.
SHIPPING NOT INCLUDED

$1299
SUGGESTED RETAIL $1999

GRAPHIC ARTS AVAILABLE

Copy Craft PRINTERS, INC.

QUARK Authorized Service Bureau

Factory Authorized COREL Service Bureau

4413 82nd Street • Lubbock, TX 79424 • FAX: 806.794.1305

Email your requests for printing quotes to request@copycraft.com

1.800.794.5594
CALL TODAY FOR A FREE COPY OF OUR NEW FULL COLOR CATALOG
Visit http://www.copycraft.com for more 4-Color Specials!

CIRCLE 426 ON READER SERVICE CARD

Data Recovery in hours.

- Over 10 years of experience with clients worldwide including Apple, NASA, HP, and FedEx.
- We've recovered more than half-a-million megabytes of Mac Data alone.
- You only pay when there's a recovery.
- Express One-Day Service is available.
- Call 24 hours a day.

415-495-5556 • FAX 415-495-5553 • RESTRICTIONS MAY APPLY
381 Clementina Street • San Francisco, California 94103

LAZARUS
DATA RECOVERY
Working at the speed of business.
800-341-DATA

CIRCLE 427 ON READER SERVICE CARD

MAC REPAIR & UPGRADE

24 HOUR SERVICE TURNAROUND • LONGER WARRANTY
FREE DIAGNOSTIC • COMPETITIVE PRICE

* Specialize in component repairs:
  • Power Mac • Power Book • Logic boards
* Advance Exchanges

DT & T MACINTOSH SERVICES, INC.
800-622-7977

720 East Evelyn Ave., Sunnyvale, CA 94086 • Tel: 408-720-9899 • Fax: 408-720-9459
http://www.dttservice.com

CIRCLE 504 ON READER SERVICE CARD

Custom Printed Mouse Pads

Prices Start at $1.49/pad
Small Orders Welcome
Your Logo Design
Wrist Support Pads
Toll Free 888-213-4340

IHS Associates
Fax 716-363-0141
10880 S. Roberts Rd
Dunkirk, NY 14048

CIRCLE 400 ON READER SERVICE CARD

DESKTOP OUTPUT SERVICES

50% OFF YOUR FIRST JOB
MAC & PC FILES ACCEPTED

- Linotronic output up to 3386 dpi
- Dye-Sublimation ■ Wax Thermal
- Color Laser Prints/Copies
- Big Color Posters

Celebrating 10 years of offering the highest quality, fastest turnaround and lowest prices.

SPECTRUM ARTS, LTD.
7455 New Ridge Rd. Suite E Hanover, MD 21076
800-788-1357 410-691-7715 301-621-1181
www.spectrumarts.com

CIRCLE 465 ON READER SERVICE CARD

SLIDES $2.75 FIERY $4.75

an introductory offer!
PC & MAC, 35mm SLIDES & DUPES, SCANS, OVERHEADS, COLOR PRINTS

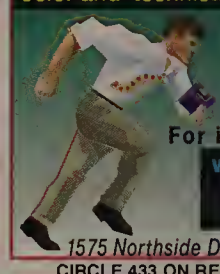
NEXTWAVE PRODUCTIONS
MULTIMEDIA PRESENTATIONS AND ONLINE SERVICES
134 TENTH AVENUE NEW YORK, NY 10011-4727

call 212 989 2727, 800 445 9002
www.NextwaveProd.com

CIRCLE 488 ON READER SERVICE CARD

Digital Output ! Overnight!

Send files FTP or Priority Air Express to Imagers and get the completed job the next morning. Get the best price, quality color and technical support. Call Us!



IMAGERS® Digital Production Center
For information
www.imagers.com
800.398.5817
404.351.5800
1575 Northside Dr. Suite 490 Atlanta 30318

CIRCLE 433 ON READER SERVICE CARD

DIGITAL IMAGING

Slides & Negatives	$3.75
4x5 chromes/negs	$30
Large Posters & Displays	
Scanning High & Low Res	
Photo CD Scans & LVT Output	
Short Run 1200 dpi Color Output	

Quantity Prints, Slides, Overheads

Show & Tell 39 W 38th St., NY, NY 10018
212 840 2912 • 212 840 7953 (fax)

CIRCLE 550 ON READER SERVICE CARD

DATA RECOVERY: 800-440-1904

7 good reasons to choose DriveSavers:

DRIVESAVERS® DATA RECOVERY

1. We're the most trusted and respected data recovery specialists.
2. 24-hour, onsite, and weekend service available.
3. Proprietary techniques so advanced we retrieve data others might simply abandon.
4. Over 12 years of data recovery experience.
5. Certified to maintain most drive warranties.
6. Featured by CNN, NextStep, C-Net, Forbes.
7. All storage devices; DOS, Win95, WinNT, OS/2, Mac OS, UNIX, Sun, SGI, Novell.

©1997 DRIVESAVERS, INC.

Clip and save this ad. Visit DriveSavers at: www.drivesavers.com

DRIVESAVERS, INC. 400 BEL MARIN KEYS BLVD., NOVATO, CA 94949, INTL: 415-382-2000, FAX: 415-883-0780

CIRCLE 510 ON READER SERVICE CARD

ONTRACK DATA RECOVERY

The World Leader in Professional Data Recovery Services!

- Mac Specialists
- Any Media
- All Operating Systems
- Emergency Services

Mention this ad for a FREE diagnostic evaluation!

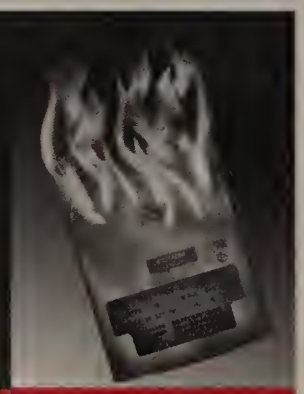
Ontrack® DATA RECOVERY
Mpls • LA • DC • London • Tokyo • Stuttgart
1-800-872-2599
www.ontrack.com
©1996 Ontrack Data Recovery, Inc.

CIRCLE 459 ON READER SERVICE CARD

PROFESSIONAL DATA RECOVERY SERVICES.

Hard Drives, Floppy Drives, Syquest, EZ-135, ZIP, JAZ, Optical & Bernoulli.

TOTAL RECALL®
THE DATA RECOVERY COMPANY



800 743-0594
VISIT US AT... www.recallusa.com
2452 WAYNOKA ROAD • COLO. SPRINGS, CO 80915 • TEL (719) 380-1616 • FAX (719) 380-7022

CIRCLE 458 ON READER SERVICE CARD

MAC REPAIR

Mac Shop Northwest

- Apple™ Certified Technicians
- One-Day Service Turnaround*
- Hard Disk Repair & Data Recovery
- Up to 75% below Dealer Rates
- Component-Level Repairs
- Expert Advice and Prices by Phone
- Power Supplies & Logic Boards
- Lifetime Repair Warranty*

Tel: 1-503-642-3456
*on many repairs. Visa/MC/AX. *Fast* overnight shipping available. We use genuine Apple™ parts.

FEDERAL EXPRESS

1-800-MAC-SHOP

CIRCLE 515 ON READER SERVICE CARD

Macworld DIRECTORY

DIRECTORY

3D GAME HARDWARE

LC STEREO GLASSES $99.95!

Liquid crystal shutter glasses w/ controller & software
True Stereoscopic 3D, in color, for games and modeling
Supports Apple's Game Sprockets (included)
Plugs into standard Mac video port; powered by ADB
Up to 4 users; extra glasses just $49.95

MACADAPT
Visa/MC/AmEx/Disc • 510-525-0789 • fax:525-5740
jzjames@macadapt.com • http://www.macadapt.com

CIRCLE [illegible] ON READER SERVICE CARD

ACCOUNTING SOFTWARE

COMPLETE BUSINESS SOLUTIONS

One-stop shop for hardware, software, financing and services for any size business. Our accounting programs range from basic to sophisticated multi-user systems plus Point of Sale, Inventory, Invoicing and Payroll packages. Call for a catalog or e-mail us at info@maxworld.com.

MAX COMPUTERS • (800) 656-6299
1506 25th Street, San Francisco, CA 94107
http://www.maxworld.com/ • Fax (415) 695-0257

CIRCLE [illegible] ON READER SERVICE CARD

COMPUTER INSURANCE

INSURES YOUR MAC

The Computerowners (sm) insurance policy repairs or replaces hardware, media and purchased software. $49 a year covers up to $2,000 of equipment against theft, fire, accidents, power surge, natural disasters and more! $50 deductible. Call for immediate coverage or information. 1-800-800-1492.

SAFEWARE, The Insurance Agency, Inc.
5760 N. High Street, PO Box 656
Columbus, Ohio 43085

CIRCLE 569 ON READER SERVICE CARD

COMPUTER TRAINING

Video Training for MACS

Clearly explained, easy-to-follow 4-tape set shows how to use your Mac more productively. Covers the Mac OS, word-process, spreadsheets, file-management tips, much more! 400 minutes of expert training for only $89.95. Visa/MasterCard/Disc/Amex. 30-Day Money Back Guarantee.

SCRIBBLERS MEDIA, INC.
1775 N. State Street • Girard, OH 44420
(800) 860-2324 (24hrs) • www.scribblers.com

CIRCLE [illegible] ON READER SERVICE CARD

DRIVE SALES & REPAIRS

FLOPPY DRIVE REPAIR & SALES

Mac 3.5" 400k, 800k, & 1.44 MEG .(Repair) . . . $40.00
Advanced Exchange . . . . . $50.00 to $85.00
New & Refurbished Drives . . . . . .CALL
Price includes most parts, cleaning & alignment. 1yr warranty on repair, 2yrs on new drives. Schools + Gov't. PO's accepted. Expert Data Recovery.

UPTIME COMPUTER SUPPORT SERVICES
http://www.scvnet.com/~uptime • 23633 Via Primero
Valencia, CA 91355 • 805-254-3384 • Fax 805-254-1950

CIRCLE [illegible] ON READER SERVICE CARD

GENEALOGY SOFTWARE

FAMILY HERITAGE FILE™

BEST in ease of use • BEST data entry accuracy

• BEST data compression • BEST Spelling Checker

• BEST genealogy error checking • BEST Individual and Family ID systems

• BEST unlimited History Notes • BEST reports

• BEST Jewish and LDS features • BEST Life Histories.

Demo $7. Free Lit. Pak.

STAR•COM MICROSYSTEMS
Order Direct • Visa/MC OK • 801-225-1480
Windsor Park E., 25 W. 1480 N., Orem, UT 84057

CIRCLE 574 ON READER SERVICE CARD

GENEALOGY SOFTWARE

REUNION®

Rated the BEST family tree software by MacUser, Macworld, Mac Home Journal. Create large family tree charts with pictures, perfect for family reunions! Now includes a FREE UPGRADE to Reunion 5. To order, call MacWarehouse 800-255-6227. Free demo on our Web site: www.LeisterPro.com

LEISTER PRODUCTIONS
P.O. Box 289 Mechanicsburg, PA 17055
tel: (717)697-1378 • e-mail: info@LeisterPro.com

MONITORS

Refurbished 17" & 20" Color Monitors

Sony GDM 1602 17" RGB Color, .26 dot pitch. Supports 832x624 pixel display. 90 Day replacement warranty....$299.

Sony GDM 1960 20" RGB Color, .29 dot pitch. Supports 1024x768 pixel display. 90 Day replacement warranty ...$699.

DFI COMPUTING
181 Salem St., Malden, MA
MC/VISA/AMEX 1-800-390-7020

CIRCLE [illegible] ON READER SERVICE CARD

ADVERTISE IN THE DIRECTORY

Advertise in the Directory!

Make sure you're part of the resource directory that reaches further than any other directory, delivering 625,000 targeted active buyers! All this at a very low cost!

For more information on advertising,
call 800/888-8622

POWERBOOK BATTERIES & RAM

Your Best Battery & RAM Source!

From PB 100 to 3400, Mac Plus to Power Mac 9600, Erudite has what you need at prices that won't slow you down. We feature power products from BTI and Absolute and memory from Viking — all new & backed by warranty. Call, e-mail or shop online for your best price! Visa/MC/Amex/Discover Accepted.

ERUDITE PRODUCTS CORP.
409 Grand Ave., Englewood, NJ 07631 800-310-8505
EMail: sales@EPC-Online.Com, www.epc-online.com

CIRCLE [illegible] ON READER SERVICE CARD

RELIGION

Bible Study on Disk or CD-Rom

Full Featured. Fast & Friendly Bible study software. As the leader in Bible study software since 1981 we have continued to listen to our customers and provide them with the tools they need. Call for a FREE catalog. http://www.brs-inc.com/bible

BIBLE RESEARCH SYSTEMS
2013 Wells Branch Pkwy. #304, Austin, TX 78728
(800) 423-1228 (512) 251-7541

"This is my favorite section of the magazine. I read these ads more than the regular ones. I love to shop and compare prices."*

– Assoc. Director of Development
Opera

Macworld DIRECTORY

*Harvey Communication Measurement Report

Contact Macworld on how to advertise. (800) 888-8622

"A RARE, HIGH-TECH EXPERIENCE THAT TEACHES GIRLS TO THINK FOR THEMSELVES, AND TO DISCOVER AND EXPLORE NEW POSSIBILITIES."

—MARIE C. WILSON, PRESIDENT, MS. FOUNDATION

"... FOR EVERY FOUR SOFTWARE PROGRAMS PARENTS BUY FOR SONS, THEY BUY ONLY ONE FOR DAUGHTERS – EVEN THOUGH GIRLS AND BOYS AGES 6 TO 10 SPEND THE SAME AMOUNT OF TIME ON COMPUTERS"

—ACCORDING TO RESEARCH DONE BY MATTEL AND QUOTED IN NEWSWEEK, OCTOBER 23, 1996

"AROUND THE AGE OF 10, GIRL'S USAGE OF COMPUTERS FALLS OFF, JUST WHEN BOYS ARE DEVELOPING SERIOUS RELATIONSHIPS WITH THEIR DOOM AVATARS"

—NEWSWEEK, OCTOBER 23, 1996

Girls are just as interested in technology as boys. But finding technology products with girl-oriented content is difficult and many girls lose interest. This is about to change. **Tech Girl's Internet Adventures** is a lavishly illustrated, colorful new book that facilitates girls' involvement with technology, helping them build a place for themselves in the future.

In **Tech Girl's Internet Adventures**, Tech Girl, the perfect online guide for girls 8 and up, leads girls safely through Cyberspace. She introduces them to over 100 girl-oriented Web sites and gives them step-by-step instructions on using the Internet. She shows girls how to use online technology to explore their interests and communicate with other girls. Girls learn about themselves while they learn about computers.

Look for **Tech Girl's Internet Adventures** at your favorite bookstore or computer store. To order a single copy, call 800/762-2974. To order in bulk or volume, call 800/842-8996 ext. 3048 and ask for Eric Taylor.

Tech Girl's Internet Adventures
by Girl Tech
0-7645-3046-1; 260 pages; 1 CD-ROM
$19.99 U.S.; $27.99 Canada

Check out IDG Books' new Web site at
http://www.idgbooks.com

http://www.girltech.com

IDG Books Worldwide
919 E. Hillsdale Blvd, Ste. 400
Foster City, CA 94404
Prices subject to change without notice.

"The best Mac book of the year."

— Boston Computer Society

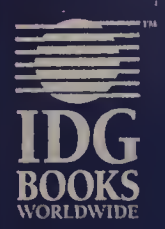
Mac gurus and *Macworld* columnists David Pogue and Joseph Schorr have teamed up once again to bring you an updated edition of their international bestseller, **Macworld Mac SECRETS**! It's crammed with over 300 new secrets, plus new coverage of System 7.6 and the Tempo OS release, OpenDoc, America Online 3, Internet strategies, Mac clones and the latest Apple models — plus one of the best trouble-shooting guides ever written. This extravaganza of undocumented features, productivity pointers, and troubleshooting tactics is perfect for both Mac mavens and newcomers!

A bonus CD-ROM features an electronic, searchable version of the book. You also get 550MB of fully-functional commercial software and award-winning shareware, including Claris Emailer 1.1, Now Utilities 5.02, and CanOpener 3.0.

Macworld Mac SECRETS, Fourth Edition
by David Pogue and Joseph Schorr
0-7645-4006-8; 1100 pages; 1 CD-ROM

Be sure to visit IDG Books' new Web site at http://www.idgbooks.com

Look for **Macworld Mac SECRETS, Fourth Edition** at your favorite bookstore or computer store. To order a single copy, call 800/762-2974. To order in bulk or volume, call 800/842-8996, ext. 3048 and ask for Eric Taylor.



IDG Books Worldwide
919 East Hillsdale Blvd., Suite 400
Foster City, CA 94404

Have a Nice Day.

Plan Ahead!

Register Online for Seybold San Francisco

(www.seyboldseminars.com)

Coming soon... Visit seyboldseminars.com for all the information you'll ever need as a publishing professional, including:

- *Rich show content*
- *Breaking news*
- *Product Reviews*
- *World-wide show information*
- *The Seybold Buying Guide, the most comprehensive product buying tool available to the publishing community today!*

Seybold San Francisco is the premiere publishing event for the digital electronic, graphic, printing, and internet/intranet publishing industries.

SEYBOLD
SEMINARS

The Web Site.

Where the Web Press Meets the World Wide Web

continued from page 214

(number) percent pure, using *(adverb)* ground *(plant)* leaves, dried *(vegetable)* stems, and extract of *(animal)* *(body part)*. Try them yourself for *(number)* weeks. You, too, can EARN MORE MONEY; lose up to *(number)* pounds in *(period of time)*; stop *(a bad habit)*; have the vigor of a(n) *(animal)*; and look more like *(famous person)* with every passing week.

This *(adjective)* blend has been used in *(foreign country)* for over *(number)* years and is now available here for only *(number)* dollars a bottle. Visit *http://www.* *(verb)* *.com* to find out about this exciting MEDICAL BREAKTHROUGH today!

If you'd like to be removed from this list, tough *(plural noun)*.

A BusinessWeek Article

With last week's news of Apple's *(number)* -million-dollar quarter profit, record-breaking sales of its PowerBook *(big number)* laptop, desktop Macs with *(big number)* -megahertz chips, and rebounding market share, a(n) *(adjective)* observer might think Silicon Valley's most *(adjective)* company is making a comeback.

But Apple's death, now that the company is in its *(number)* th consecutive year, is surer than ever. *(Person in the room)* is the latest employee to resign. "Apple was a dead-end job," said the former mailroom clerk in Apple's Advanced *(noun)* division, now a restroom attendant at *(fast-food chain)*. Meanwhile, Apple's new OS, code-named *(musical term)*, is still unfinished. "I'd rather put my *(body part)* in a(n) *(animal)*'s mouth than bank on Apple's future," said an analyst at a large software company in Redmond, Washington.

Apple's quality has suffered, too. "I just bought a used Mac," reported one user. "The *(computer part)* was *(adjective)*, the *(another computer part)* was covered with *(color)* *(a liquid)*, and the keyboard was filled with *(animal)* fur. If this is the way it sells computers, how can Apple survive?"

Apple's stock has risen *(number)* dollars per share in recent days, a sure sign it'll eventually go down again. "Buy low, sell high," says one investor. "That's what my *(relative)* *(woman's name)* always says."

Your Kid's Web Page

HI!! :) And welcome to the *(name of person in the room)* Home Page.

I'm in grade *(number)* at *(U.S. political figure)* Junior High School. I play *(musical instrument)* in the marching band, and like to do *(California sport)* with my best friends, *(a first name)* and *(another first name)*. My favorite rock groups are the *(adjective)* *(adjective)* *(adjective)* *(plural vegetable)* and the *(violent "ing" verb)* *(plural noun)*. Ooooh, that *(musical instrument)* player is sooooo cute!!!

Click here to see a picture of *(boy's name)*, my *(animal)*. He eats mainly *(plural insect)* and whole-grain *(a plant)*, but now and then he gets out of his cage and gets into the *(piece of furniture)* and freaks out my dad. Click here to hear Dad say, "Get that *(colorful curse word)* animal out of here RIGHT NOW, or it's *(name of entree)*!"

NEW FEATURE! See what I had for lunch today. Today it was *(lunch item)*.

You are visitor number *(number under 50)*. Send me e-mail! **m**

DAVID POGUE is the *(adjective)* coauthor of the *(adjective)* book, *The Weird Wide Web* (IDG Books, 1997). His Web page is at *http://www.concentric.net/~pogue.*

IDG INTERNATIONAL DATA GROUP **July 1997, Volume 14, Number 7** Macworld (ISSN 0741-8647) is published monthly by Macworld Communications, Inc. Editorial and business offices: 501 Second St., San Francisco, CA 94107, 415/243-0505. Subscription orders and inquiries should be directed to 800/288-6848 or 303/604-1465. Subscription rates are $30 for 12 issues, $60 for 24 issues, and $90 for 36 issues. Foreign orders must be prepaid in U.S. funds with additional postage. Add $18 per year for postage for Canada and Mexico subscribers. Add $69 per year for postage to all other countries. Periodicals postage paid at San Francisco, California, and at additional mailing offices. **Postmaster:** Send address changes to Macworld, P.O. Box 54529, Boulder, CO 80322-4529. Printed in the U.S.A.

Buy Smart with Mac Superguide.

MACWORLD SUPERGUIDE

To buy smart when you're choosing a Mac OS computer, your best bet is to let Macworld be your guide. Check out the Mac Superguide in this issue — and every issue — for the latest and greatest in Mac systems. It's a comprehensive guide to every system on the market, meticulously reviewed and Star Rated, with our favorites highlighted by an Editors' Choice symbol.

With all the systems out there, you could easily get lost if you try to navigate them on your own. Don't risk it; trust the Superguide.

Macworld
THE ESSENTIAL MACINTOSH® RESOURCE

The Desktop Critic

by David Pogue

Mac Libs! It's Fun for the _____ Family

THE PARTY GAME FOR LANGUAGE-LOVING MAC FANS

DO YOU REMEMBER Mad Libs? They were little books of funny stories in which strategic words were replaced by blanks. Before revealing what the story was about, you'd ask your fellow game players to supply a word for each blank ("Gil, an adjective. Ellen, a bodily appendage"). Finally, you'd read the completed story to the group, holding your sides from laughing so hard.

What made the game funny was the element of the bizarre that your fellow players' non sequitur words added to familiar, everyday paragraphs. Well, maybe it's just me, but it sure seems as though the computer world, too, has become a parade of predictable pieces of prose. Everywhere you look, with every passing month, life's headlines, press releases, and e-mails seem more and more alike. About the only thing that differentiates one from the next is how they . . . fill in the blanks.

If you've got a gang together, grab a pencil and let the game begin. If you're operating solo, the clever souls at Macworld Online have created an interactive online version of this column for your enjoyment. Dial up *http://www.macworld.com*—but don't read this column first, or you'll spoil the surprise.

Microsoft to Acquire . . .

Redmond, Wash.—Microsoft Corporation today announced that it will be purchasing *(city in California)* Software, whose innovative *(verb)* -Meister Pro software promises to change the *(noun)* -design industry dramatically. Microsoft paid *(number)* billion dollars for the smaller company.

"This software is the *(adjective)* complement to our existing line," said *(name of a person in room)*, Microsoft's director of *(plural noun)*. "And besides, we haven't bought out anybody in *(period of time)*. Mr. Gates has been feeling *(adjective)* and unproductive."

"Look, I did this for the *(plural noun)*, not the money," said *(name of a person in room)*, CEO of the acquired company. "I'm confident that Microsoft will work *(adverb)* to market our technology. *(Expletive)*, they wouldn't just wipe us off the map and dump the technology. In fact, they've already got a new name picked out for the program: Microsoft *(boy's name)*."

Mr. Gates could not be reached for comment; a spokesperson for Mr. Gates said that the Microsoft CEO was busy redesigning the *(part of a house)* of his *(number)* -million-dollar mansion.

GORDON STUDER

A Letter from Steve Case

Dear America Online subscriber: As you know, I make a(n) *(adjective)* effort to write an open letter to our members every *(period of time)*. It's our obligation to keep our *(number)* million subscribers up-to-date on developments here in *(European city)*, Virginia.

Many of you have complained *(adverb)* about busy signals when you dial in to AOL. Some of you can't get online even if you dial *(number)* times in a row, especially between *(time of day)* and *(another time of day)*. Unfortunately, things are going to get *(adjective)* before they get better. However, by *(year in the future)*, I think you'll see some real improvement.

For example, we're spending *(number)* dollars upgrading our network. Every week, we're installing more modems, more *(plural noun)*, and more *(plural noun)*. In addition, we're making it easier for you to get online by getting other people *off;* our computers now disconnect loiterers after only *(number)* seconds of inactivity. If you're still having trouble connecting, try dialing at off-peak times, such as *(a holiday)*, or try the access number of a different city, such as *(city outside the United States)*.

Finally, we hope you're feeling *(adjective)* about our new AOL 3.0 software. Not only is it even more *(adjective)* and *(adjective)* than ever, but it runs *(adverb)* on a Power Mac. As a bonus, it's *(number)* times slower, so you'll spend less time noticing that you can't dial in to AOL, the *(superlative adjective)* information service in the world.

A Junk E-Mail

Our research indicates that you might be interested in this *(adjective)* offer.

Are you feeling *(adjective)*? Is your *(body part)* looking *(color)* and *(adjective)*? Do you feel like you've been hit by a *(type of vehicle)*? At parties, do your friends mention that your *(body part)* looks like a(n) *(adjective)* *(noun)*? Perhaps what you need is ORGANIC HERB SUPPLEMENTS.

Our Vita• *(funny noise)* caplets are

continues on page 213

Macworld

Subscriber Courtesy Voucher

As a new subscriber, you are entitled to receive a full year of Macworld for 60% less than the annual cover price of $59.88. BONUS GIFT: Our exclusive Clip Art CD containing an extensive collection of clip art images, digital stock photos and fonts! Send for your Clip Art CD now!

Please Check:

☐ 12 issues/$24.00. Bill me later.

Name

Company

Address

City, State, Zip

E-Mail

Check us out at http://www.macworld.com

Savings Statement

Annual Cover Price
$59.88

Regular Subscription Price
$30.00

Your Special Rate
$24.00

Bonus Gift
Clip Art CD

Allow 4 to 6 weeks for delivery. For Mexican and Canadian subscriptions, please add $18 per year for shipping. Add $70 annually for all foreign countries.

4B8Q7

Macworld SAVINGS VOUCHER

❑ **Yes!** I want to get Macworld for $2.00 per issue and save 60% off the cover price. Plus, I'll get the Macworld Clip Art CD—loaded with an extensive collection of clip art images, digital stock photos and fonts—**FREE** with my order.

NAME

COMPANY

ADDRESS

CITY/STATE/ZIP

E-MAIL

Please allow 6-8 weeks for delivery of your first issue. Mexican and Canadian orders add $18 USD per subscription for postage plus 7% GST. Foreign orders add $70 postage.

4B846

IMPORTANT: Return this voucher to start your subscription and receive a FREE BONUS!

ANNUAL COVER PRICE
$59.88

YOUR ONE-YEAR RATE
$24.00

YOUR FREE BONUS
MACWORLD CLIP ART CD

CHECK US OUT AT WWW.MACWORLD.COM **MAIL THIS CARD OR CALL 800-288-6848**

Macworld

60% Savings Plus a Free CD

❑ **Yes.** Send me Macworld and my FREE Macworld Clip Art CD. I'll pay just $24 for 12 monthly issues—60% off the annual newsstand rate.

Also, please rush my FREE CD-ROM!

NAME

COMPANY

ADDRESS

CITY/STATE/ZIP

E-MAIL

Please allow 6-8 weeks for delivery of your first issue. Mexican and Canadian orders add $18 USD per subscription for postage plus 7% GST. Foreign orders add $70 postage.

Check us out at www.macworld.com

4B820

Macworld

CLIP ART CD

Loaded with an extensive collection of clip art images, digital stock photos and fonts. This CD-ROM is yours absolutely FREE!

Rush my
FREE Clip Art CD!

NO POSTAGE
NECESSARY
IF MAILED IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 1167 BOULDER CO

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
SUBSCRIPTION DEPARTMENT
PO BOX 51666
BOULDER CO 80323-1666

Rush my
FREE Clip Art CD!

NO POSTAGE
NECESSARY
IF MAILED IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 1167 BOULDER CO

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
SUBSCRIPTION DEPARTMENT
PO BOX 51666
BOULDER CO 80323-1666

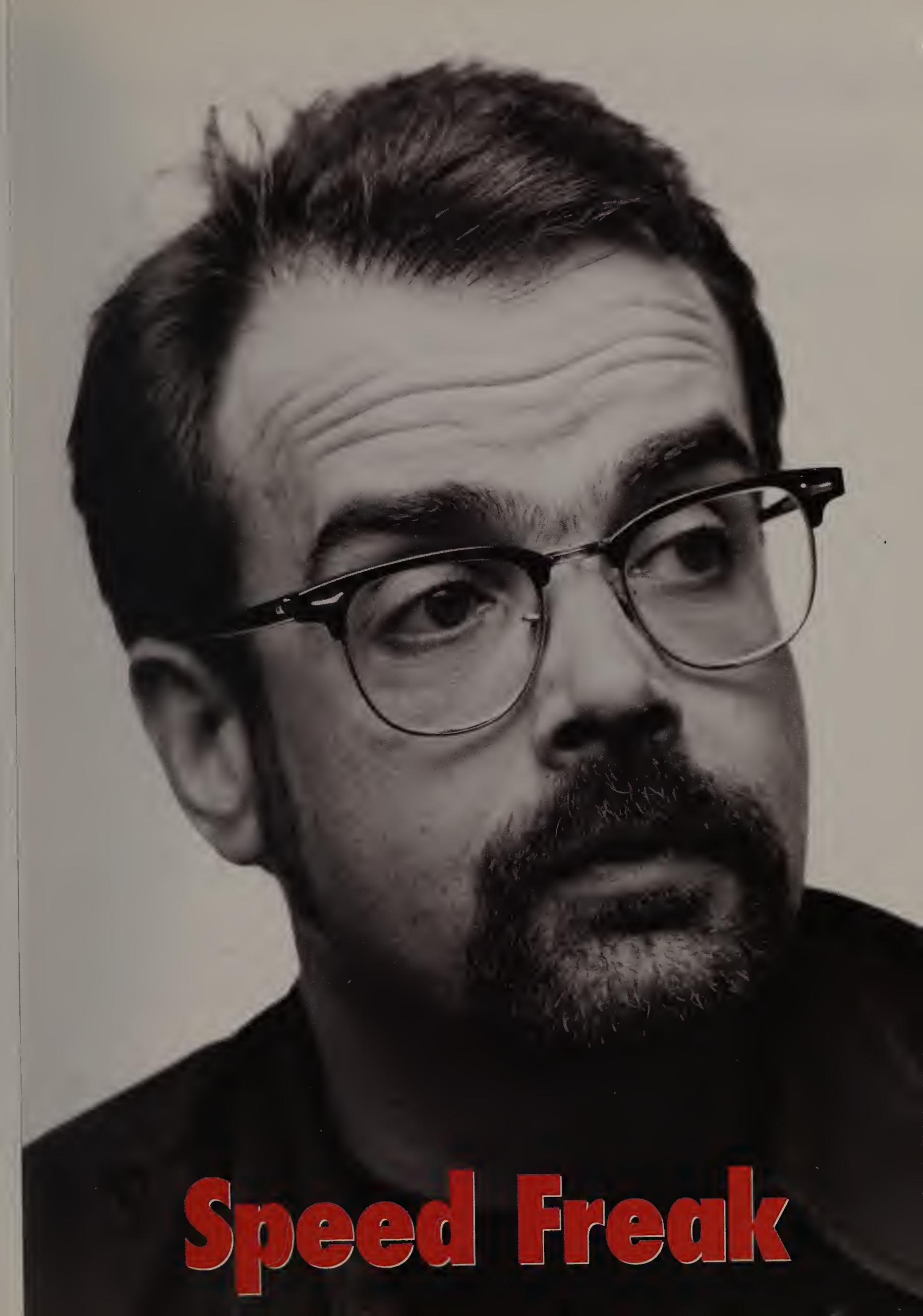
Rush my
FREE Clip Art CD!

NO POSTAGE
NECESSARY
IF MAILED IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 1167 BOULDER CO

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld
SUBSCRIPTION DEPARTMENT
PO BOX 51666
BOULDER CO 80323-1666


Speed Freak

New PowerCenter Pro. I
The Ultimate

If You're Like Frank Kozik, You Need A Fast System.

To people like Frank Kozik, high performance from their Mac™ OS system is essential. As an underground poster designer, Kozik works daily with files nearing a half-gigabyte in size. When you're working with files this size, you better have a high performance machine. That's why speed freaks like Kozik choose Power Computing's award-winning systems.

Power Computing Is The First To Offer A 60 MHz Bus.

The new PowerCenter™ Pro is the only system on the planet to have a 60 MHz bus. Since the bus is the gateway between the processor and the rest of the system, higher bus speeds mean higher total system speeds. Couple that with a 180 or 210 MHz PowerPC™ 604e processor and you get the fastest mid-range system you can buy.

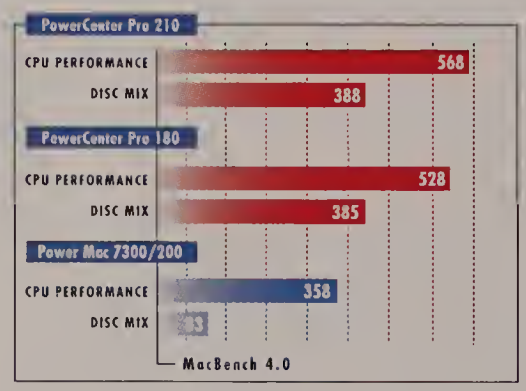
There's More To Making A Machine Fast Than Just Using A Fast Processor.

High performance depends on several components working together. No one is more aware of this than our team of world class engineers. This is why they sweat every detail on every Power Computing system made. Our systems are designed for maximum performance for the price. The results are industry exclusives such as the only standard 1MB Level-2 cache, a 16x CD-ROM, 3D graphics acceleration, and an upgradeable daughtercard.

Custom-Configuration Is Our Trademark.

Since high performance can be defined differently depending whether you're a designer, digital photographer or a studio producer (to name a few), we've made custom-configuration our trademark. If you want an internal Zip™ or Jaz™ drive or both, a second internal hard drive, more RAM, a video card or a modem, Power Computing can custom-configure it, test it and deliver it straight to your doorstep. You'll save money. You'll save time. And most importantly, you'll be saving yourself a lot of headaches by working on a faster Mac from Power Computing.

Check Out The PowerCenter Pro's Benchmarks



Features Speed

Upgradeable 180 or 210 MHz PowerPC 604
Exclusive 1MB L2 Cache • Exclusive Built-I
30-Day Money Back Guarantee • Lifet

PowerCenter Pro 2

210 MHz PowerPC 604e CPU With 2 MB

- Upgradeable 210 MHz PowerPC 604e CPU
- 2 GB 5400 RPM HD
- Exclusive 60 MHz Bus
- 16X CD-ROM Drive
- 1 MB Level 2 Cache
- 2 MB VRAM (4 MB Max)
- 3D Accelerated Graphics

ORDER DIRECT: 8

Major Accounts, Education and Governm

OR ORDER ON OUR NEWLY REDESIGNED

© 1997 Power Computing Corporation. All rights reserved May 1997. Apple, Macintosh and Mac are registered trademarks. The Mac OS and the Mac OS logo are trademarks of Apple Computer, Inc., and are used under license from Apple Computer, Inc. The Mac OS logo is registered in th trademark of International Business Machines, Corp. Be OS is a trademark of Be Incorporated and is used under license from Be Incorporated. All other brand and/or product names are the property of their respective holders. QuickShip bundles are shipped with

xclusive 60MHz Bus.
Speed Fix.

eaks Crave:

ocessor • Exclusive 60MHz Bus
) Video • Exclusive 16X CD-ROM
Toll-Free Technical Support

) Complete
Includes Power 17" Monitor*
CI Expansion Slots
i-Tower Enclosure
5 Global Village Modem
ended Keyboard and Mouse
00 Bundled Software

ust $2995

POWERCENTER PRO 180 COMPLETE
Power 15" Multimedia Display**
32MB RAM (512MB max)
33.6 Global Village Modem
Super-Fast 60 MHz Bus

- Upgradeable 180 MHz PowerPC 604e Processor
- ✱ 2GB 5400 RPM HD
- ✱ Exclusive 60 MHz Bus
- ✱ Exclusive 3D Accelerated Graphics
- ✱ Exclusive 16x CD-ROM Drive
- ✱ Exclusive 1MB Level-2 Cache
- 2MB Video DRAM
- 3 PCI Expansion Slots
- Mini-Tower Enclosure
- $1,000 Bundled Software
- Add Iomega 100MB Zip Drive only $145

NOW SHIPPING

$2695

36 month business lease $111 per month

POWERCENTER PRO 210 STARTER
210 MHz PowerPC 604e Processsor
16MB RAM (512MB max)
16x CD-ROM Drive
Super-Fast 60 MHz Bus

- Upgradeable 210 MHz PowerPC 604e Processor
- ✱ 2GB 5400 RPM HD
- ✱ Exclusive 60 MHz Bus
- ✱ Exclusive 3D Accelerated Graphics
- ✱ Exclusive 16x CD-ROM Drive
- ✱ Exclusive 1MB Level-2 Cache
- 2MB Video DRAM
- 3 PCI Expansion Slots
- Low-Profile Enclosure
- $1,000 Bundled Software

NOW SHIPPING

$2395

36 month business lease $99 per month

POWERCENTER PRO 180 STARTER
16MB RAM (512MB max)
2GB 5400 RPM Hard Drive
Super-Fast 60 MHz Bus

- Upgradeable 180 MHz PowerPC 604e Processor
- ✱ 2GB 5400 RPM HD
- ✱ Exclusive 60 MHz Bus
- ✱ Exclusive 3D Accelerated Graphics
- ✱ Exclusive 16x CD-ROM Drive
- ✱ Exclusive 1MB Level-2 Cache
- 2MB Video DRAM
- 3 PCI Expansion Slots
- Low-Profile Enclosure
- $1,000 Bundled Software

NOW SHIPPING

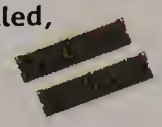
$2095

36 month business lease $86 per month

Power Computing Also Offers Great Upgrade Options With The Same Quality As Our Systems:

The high resolution (.26 dot pitch) Power 17" display (vis: 15.7") is great for graphics professionals. Get one for just $629

Maximize your system's power with plenty of pre-installed, tested, hassle-free RAM.



8MB $65 32MB $260
16MB $130 64MB $500

The Power 15" Multimedia Display (vis: 13.7") with built-in speakers makes a great second monitor for pallets or a primary monitor for anyone on a budget. Get one for just $339

PowerComputing

2400 South IH 35, Round Rock, TX 78681 • Tel. 512-388-6868 • Fax. 512-388-6799 • www.powercc.com

Circle 161 on reader service card

00-488-0907
t Customers Call 800-952-9251
EBSITE AT WWW.POWERCC.COM

States and other countries. The Power Computing logo is a registered trademark of Power Computing Corporation. PowerTower, PowerCenter, and PowerBase are trademarks of Power Computing Corporation. MacBench is a registered trademark of Ziff-Davis, Inc. PowerPC is a
urs of credit approval. Power Computing is not responsible for errors in photography or typography Prices and specifications are valid in the U.S. only and are subject to change without notice. *Visible viewing size 15.7" **Visible viewing size 13.7

Orbit. It's a trip.

Tired of that same old mouse? Want to go where no one has ever gone before?

Buckle your seatbelts and get ready for Orbit.

Orbit is a new kind of trackball that combines the comfort of a mouse with the precision of a trackball. And Orbit is designed to feel like an extension of your own hand. The result is out-of-this-world comfort and total fingertip control of your cursor.

Orbit comes with our award-winning MouseWorks software, a 5-year warranty, toll-free technical support, and a no-risk 90-day trial.

Don't settle for the ordinary. Get into Orbit.

PC Mac Connection 1-800-986-2259

MacWAREHOUSE 1-800-255-6227

KENSINGTON®

www.kensington.com

The Mac Zone 1-800-258-2088

MacMall 1-800-222-2808

APS Technologies 1-800-374-5681

Circle 1 on reader service card

Orbit and MouseWorks are trademarks and Kensington is a registered trademark of Kensington Microware Limited. All other trademarks are the property of their respective owners. © 1997 Kensington Microware Limited. 3/97